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THE PAPER INDUSTRY

A MONTHLY EDUCATIONAL JOURNAL MAY, 1932

Wood Pulp

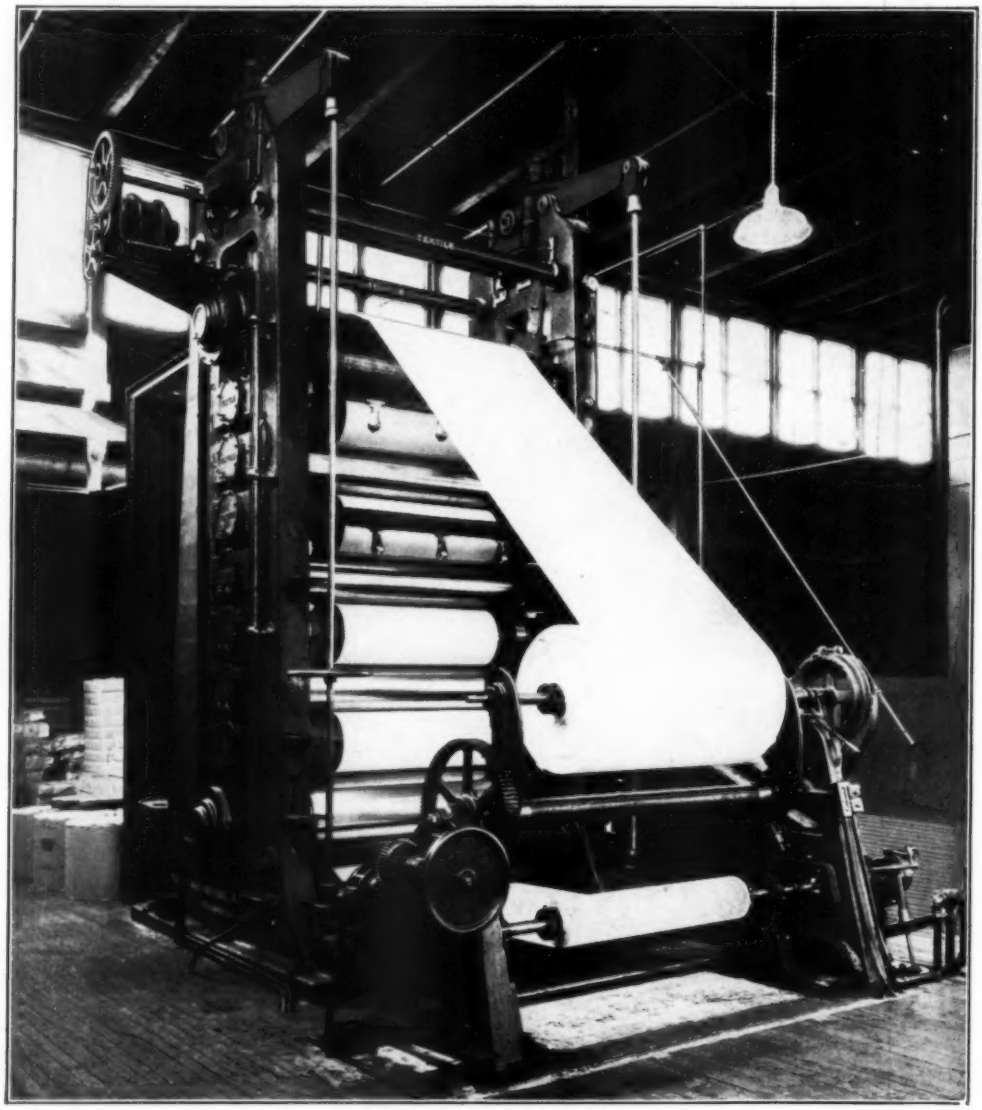
JOHANESON, WALES & SPARRE, INC.

250 PARK AVE. NEW YORK, N.Y.

TEL. ELDORADO 5-6053

Super Calenders

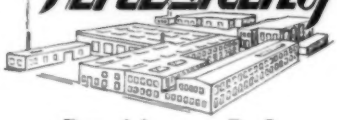
- **to any width and number of rolls**
  Equipped with roller and ball bearings



We Build

Super Calenders
Friction Calenders
Embossing Calenders
Cotton and Paper Rolls

The Textile-Finishing Machinery Co.



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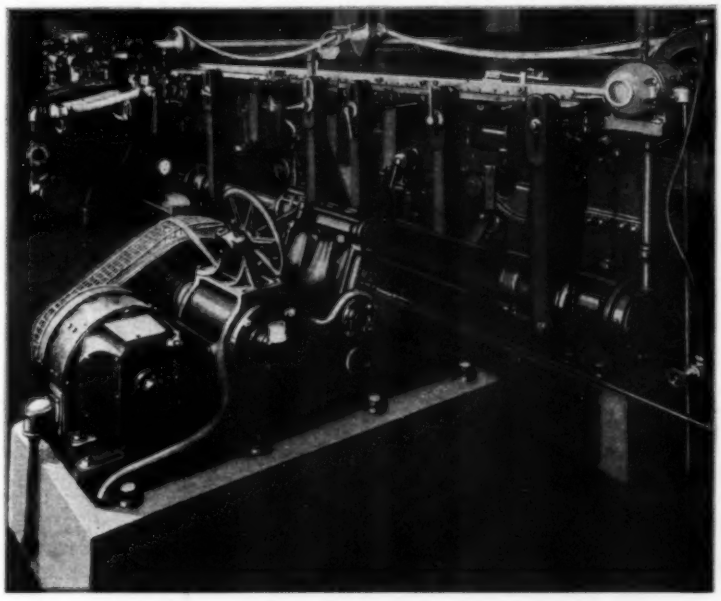
Southern Agent
H. G. Mayer, Charlotte, N. C.

YOU CAN HAVE THIS

MODERN SHAKE

ON YOUR OLD MACHINE



Showing the shake mechanism of the improved Beloit Universal High-Speed Super-Shake on a machine making high-grade papers. This shake can be applied to any machine—from news to highest-grade book or bond.

"I am delighted—*the finest book paper I have ever seen.*"

Recently a book mill installed a new Beloit Fourdrinier equipped with our Universal High-Speed Super-Shake. Here is what this customer says about it:

> "I enclose samples of super paper made on No. 2 Machine, which, to my way of thinking, are probably *the finest samples of paper* of this particular class that I have ever seen. This paper was made on your new Fourdrinier. *I am delighted.*"

This modern shake feature can be applied to any old machine, giving it new life and vigor, and insuring better paper, greater speed, and complete satisfaction.

If you manufacture good news, book, kraft, bond, tissue or specialties, you can have this new shake installed on your present paper machine.

Write us for particulars

BELOIT IRON WORKS, BELOIT, WIS., U. S. A.

The *Beloit Way* is the *Modern Way*

The BELOIT

HIGH-SPEED SUPER-SHAKE

THE PAPER INDUSTRY

A MONTHLY EDUCATIONAL JOURNAL

Devoted to the Interests of the Pulp and Paper Industry

MAY, 1932 VOL. XIV No. 2

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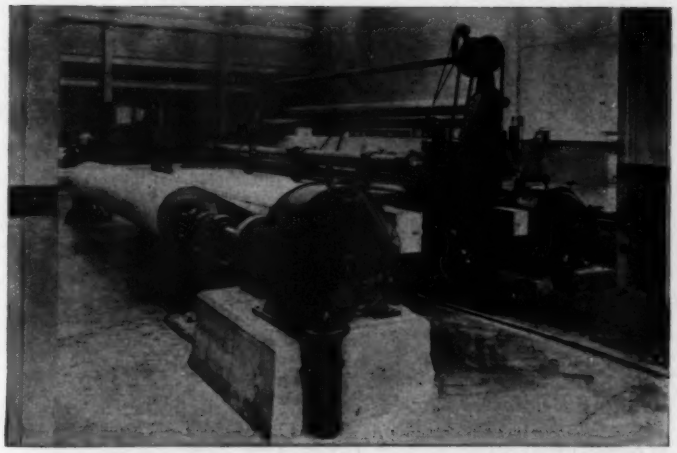
—a NEW Winder Drive

that

SAVES

Wasted Power



Westinghouse Motors on a 228-in., 2-drum, 3000-ft. winder, showing the small space requirements of this drive. Braking Generator is in foreground.

OUT of every dollar you now spend on power for old-fashioned winder drives, more than half frequently goes to heat up brake bands and drums on the unwinding stands. This wasted power can be saved and power costs reduced, with the new Westinghouse Winder Drive.

This new winder drive has an electric braking generator that returns energy, formerly wasted, to the winder motor. Furthermore, it provides automatic control of sheet tension, assures fewer paper breaks and results in a better and more uniformly wound roll.

Power requirements are not only greatly reduced but expensive wear and tear on brakes is entirely eliminated.

FOR NEW AND OLD WINDERS

The new Westinghouse winder drive, with individual motors on each drive shaft and a braking generator on the unwinding stand, is adaptable to both new and existing two and four-drum winders. Complete control of tension and speed is centralized at one point. Ask the nearest Westinghouse Sales office for further information.

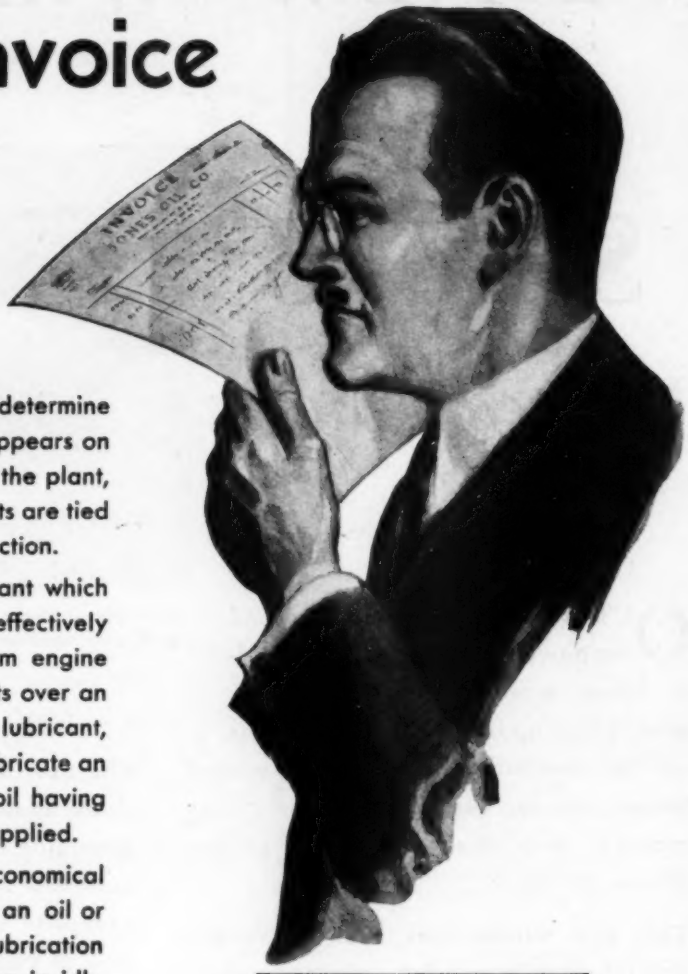
In 1911, this winder with Westinghouse Motor Drive was modern and up-to-the-minute. It was one step in the evolution of the highly efficient Westinghouse electric Winder Drive of 1932.

Quality workmanship guarantees every Westinghouse product

Westinghouse

T 79064

The True Cost of Lubrication is not on the invoice



ONLY one of the eight factors which determine the actual and final cost of lubrication appears on the invoice. The other seven are found in the plant, for it has been proved that lubrication costs are tied up inseparably with operation and production.

Regardless of purchase price, a lubricant which can perform the extremely difficult task of effectively lubricating the valves of a Corliss steam engine will show large savings in lubrication costs over an oil that is not efficient. The highest priced lubricant, lacking certain characteristics, may not lubricate an electric motor as effectively as another oil having the proper qualities and being correctly applied.

There is much more to effective, economical lubrication than the quality or price of an oil or grease. Rightfully included in reckoning lubrication costs are savings resulting from reduction in idle machine hours through better lubrication. Likewise, savings in power, in material and labor costs of repairing equipment should be taken into consideration. Often, to determine just what costs should be charged to lubrication and to effect savings which may be possible, the training of a lubrication engineer is required.

You can get this training and knowledge working for you by calling in a Standard Oil Lubrication Engineer. He may be able to render valuable assistance to you in obtaining more effective and economical lubrication. No charge, of course, for this service.

STANDARD OIL COMPANY
(INDIANA) 1705
910 South Michigan Avenue Chicago, Illinois

Monographs on Lubrication

Each month the Standard Oil Company (Indiana) publishes a technical monograph on the lubrication of some particular type of equipment.

The first monograph, published in April was entitled "Reducing Lubrication Costs." The second monograph being published this month, is "Lubricating the Corliss Valve Steam Engine." A copy of any or all monographs will be sent to you at your request.

. . . *with these du Pont Dyestuffs*

DU PONT DYESTUFFS
REG. U.S. PAT. OFF.

DYES FOR PAPER

PONTAMINE YELLOW CH CONC.

PONTAMINE FAST SCARLET 4 BS

PONTAMINE DIAZO BLACK BH CONC.

IN ADDITION to possessing very good fastness to alkali these du Pont Dyestuffs will produce all the current shades of yellow, buff and other colored soap wrappers.

Remember — our Technical Service Department is always available to help solve your paper dye problems.

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Dyestuffs Division, Wilmington, Delaware
SALES OFFICES: Boston, Mass., Charlotte, N. C., Chicago, Ill., New York, N. Y., Philadelphia, Pa., Providence, R. I., and San Francisco, Calif. Represented in Canada by Canadian Industries, Ltd., Dyestuffs Division, Canada Cement Building, Montreal, Canada.

ARE YOUR CUSTOMERS DEMANDING

BETTER FINISH

?

If you are confronted with this problem we can help you.

Three years ago Kenwood offered a new line of Plate Press felts which has been accepted by the trade throughout the country.

The sale of these felts has increased steadily from month to month even during the past year when most paper mills have curtailed production extensively. This means that Kenwood Plate Press felts are enabling the paper manufacturer to produce a sheet that is meeting the exacting demands of the trade for better finish.

In these times of keen quality competition your finish must be the best that it is possible to obtain. Kenwood Plate Press felts will solve this problem for you.

The demand for better finish has led board makers as well as the manufacturers of fine paper to turn to Kenwood for these felts which are so outstanding in their ability to produce fine finish without sacrifice of life or water removal.

Ask our representative to tell you about the Kenwood Plate Press felts.

KENWOOD WOOL PRODUCTS

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KENWOOD MILLS LTD., ARNPRIOR, ONTARIO, CANADA

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Since
1881

Some BAKERMADE Products

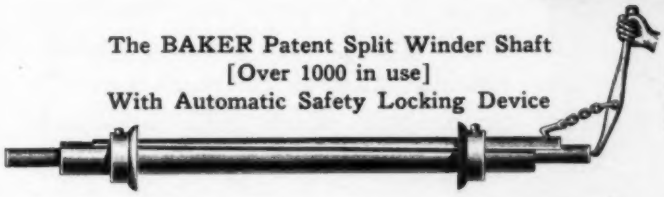
The MONARCH Diaphragm Screen

Takes the Dirt out—
and **takes it away**

The BAKER Horizontal Rotary Screen

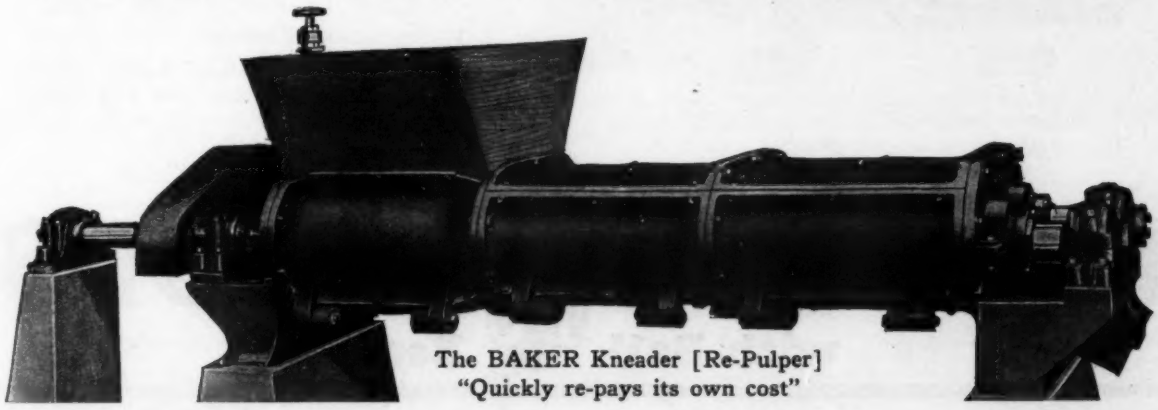
The BAKER Horizontal and Vertical Centrifugal Screens

The BAKER Patent Split Winder Shaft
[Over 1000 in use]
With Automatic Safety Locking Device



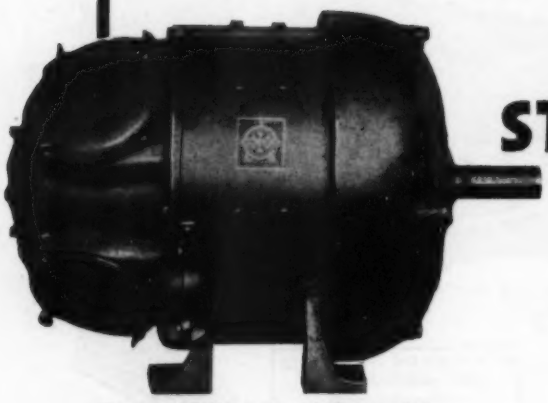
BAKERMADE PRODUCTS
lower maintenance and replacement costs

BAKER VALVES and FITTINGS; Bronze, Acid-Resisting, Stainless Steel, Steel, Iron, Lead, etc.

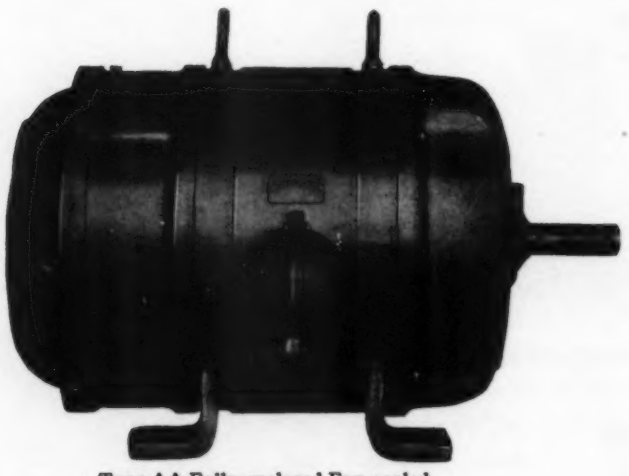


The BAKER Kneader [Re-Pulper]
"Quickly re-pays its own cost"

MOTOR PROTECTION *that means* STEADY OPERATION



Type T Fully-enclosed Fan-cooled Direct-current Motor for constant and adjustable-speed duty.



Type AA Fully-enclosed Fan-cooled Induction Motor.

Enclosed fan-cooled Reliance Motors strike at the root of most motor troubles. Vital parts are tightly sealed so that no outside air can reach them. Dirt and moisture cannot get in to do damage to the windings.

You can have this protection in Reliance Motors without complications, excessive size or weight.

Bulletin 112 gives details for A-c. Motors, bulletin 208 for D-c. Motors.

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1058 Ivanhoe Road, Cleveland, Ohio

BRANCHES:

Atlanta, Birmingham, Boston, Buffalo, Chicago, Cincinnati, Detroit, Milwaukee, New York, Philadelphia, Pittsburgh, Toledo.

RELIANCE A-C D-C MOTORS

with Ball Bearings

Belt Conveyors

For Carrying—CHIPS

Jeffrey Troughed Belt Conveyor Carrying Chips

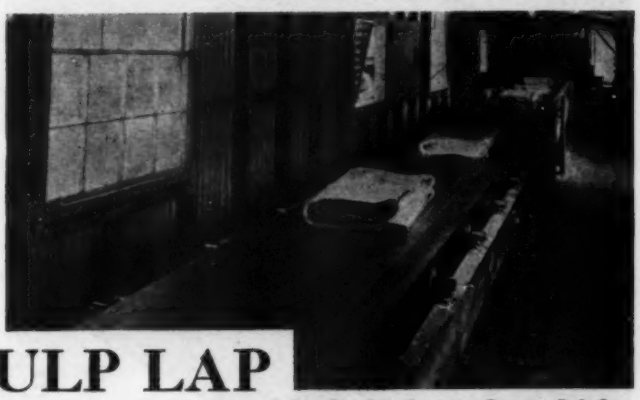
Jeffrey Belt Conveyors are being extensively used in the Pulp and Paper Industry for carrying chips, pulp lap and coal—both on the horizontal and up inclines.

They provide continuous delivery—a controlled steady stream of material—and are extremely economical where large quantities are handled.

Jeffrey troughed idlers in three and five-pulley types with plain, bronze-bushed or roller bearings are used when carrying chips or coal. These belt carriers are mounted on either channel iron or wood bases as specified. They are also furnished with outboard bearings for wide belts.

Jeffrey flat idlers are used for handling pulp lap, packages, boxes, etc.

Jeffrey Belt Conveyors are light in weight, simple in design and construction, silent in operation, and require a relatively small amount of power. Most wear is on the belt, the replacement of which gives you a practically new conveyor.



—PULP LAP

Jeffrey Flat Belt Conveyor Carrying Pulp Laps

—COAL

Jeffrey Troughed Belt Conveyor Handling Coal

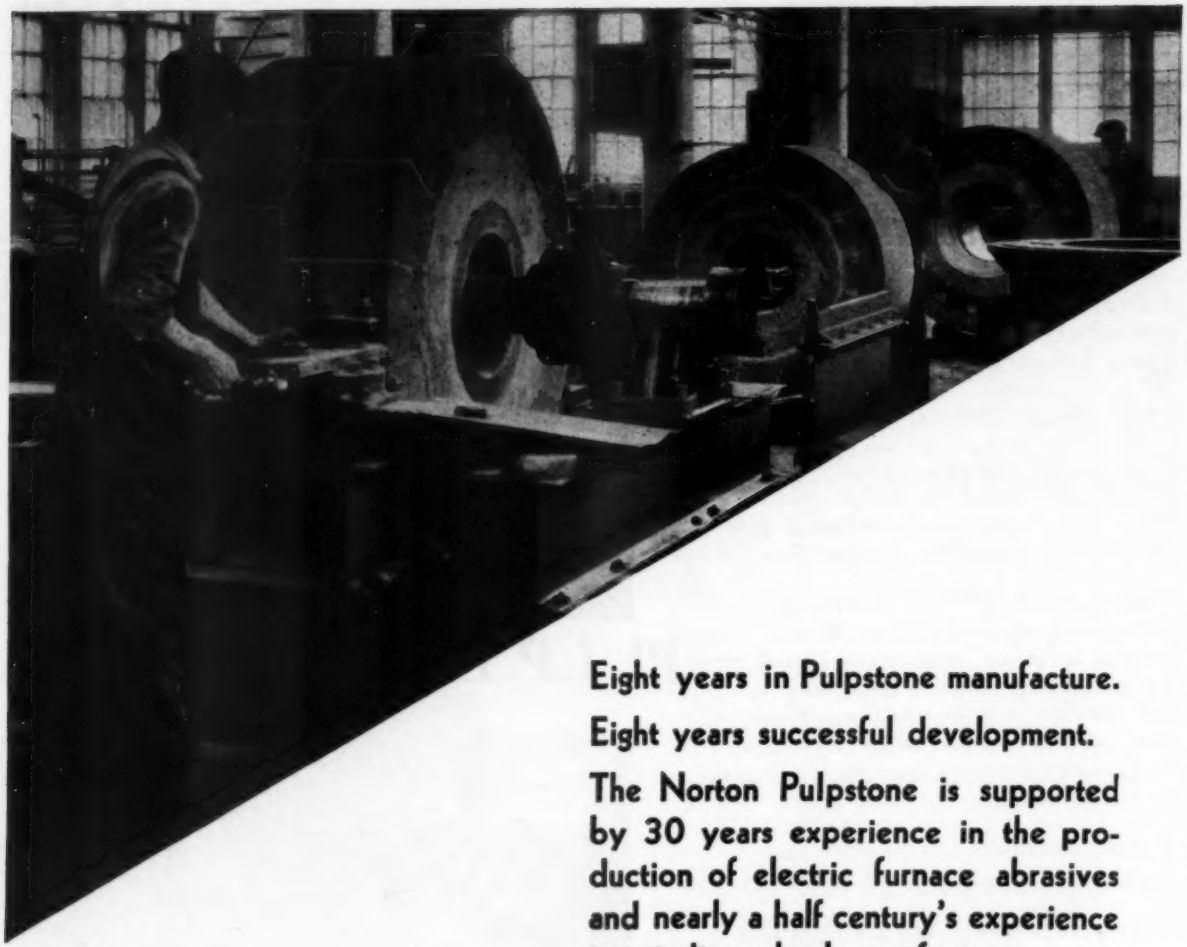
Detailed information about Jeffrey Standard Belt Conveyor Units is contained in Catalog No. 535-A which we will be glad to mail upon request.

The Jeffrey Manufacturing Company

944-99 N. Fourth St., Columbus, Ohio

New York Rochester, N. Y. Philadelphia Scranton, Pa. Cincinnati Detroit Milwaukee Denver Birmingham Huntington, W. Va.
Buffalo Pittsburgh Boston Cleveland Chicago St. Louis Salt Lake City Houston Baltimore, Md.
Jeffrey Manufacturing Company, Ltd., of Canada, Head Office and Works, Montreal; Branch Office, Toronto

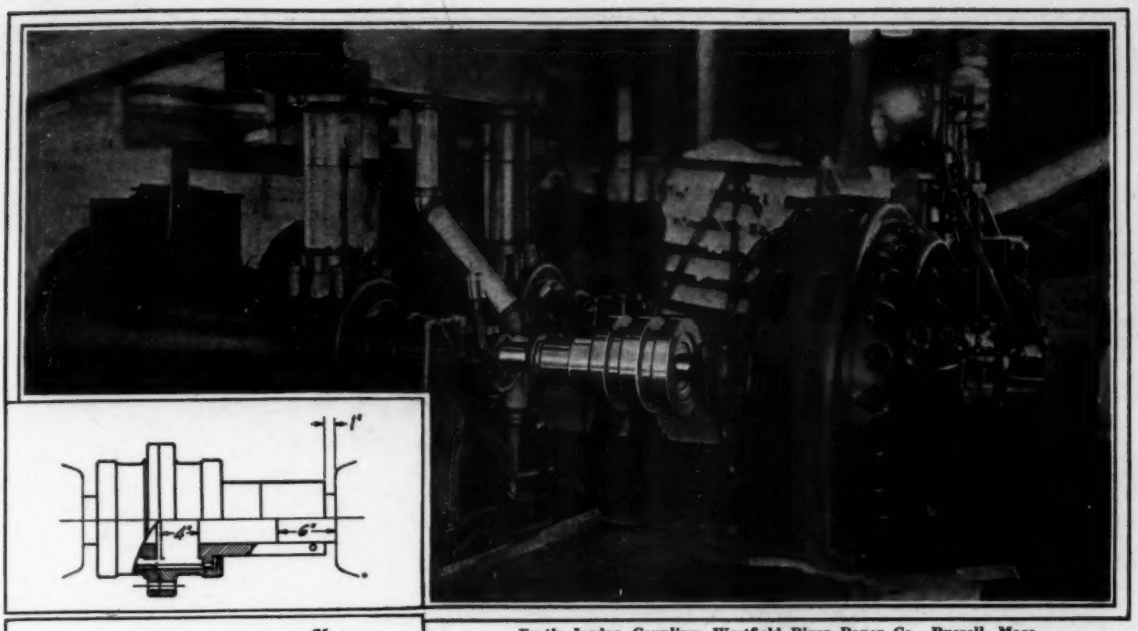
NORTON



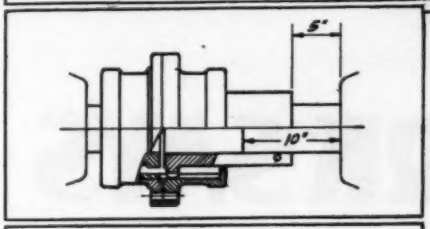
Eight years in Pulpstone manufacture.

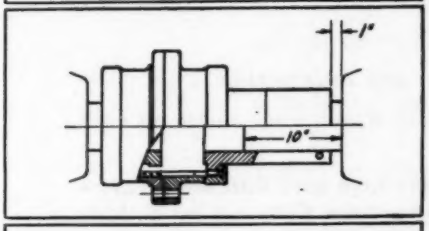
Eight years successful development.

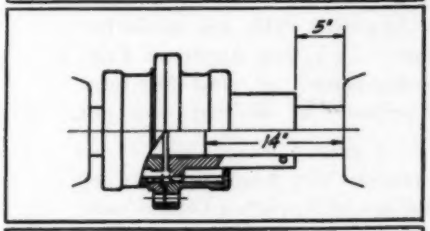
The Norton Pulpstone is supported by 30 years experience in the production of electric furnace abrasives and nearly a half century's experience in grinding wheel manufacture.

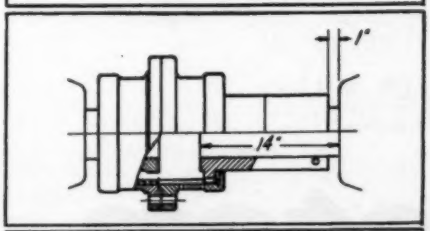


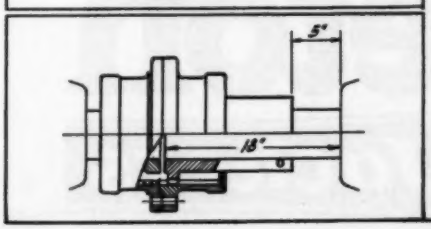
Fast's Jordan Coupling, Westfield River Paper Co., Russell, Mass.











How FAST'S New Jordan Coupling Works

BY USE of Fast's principle of Mechanical Flexibility, not only are shut-downs for coupling repairs eliminated, but adjusting the Jordan plug is simple, providing a full 12-inch adjustment on a 5-inch coupling.

Note the drawings of a Fast's Coupling on a 5-inch Jordan shaft. Diagram 1 shows the position when Jordan lining is new. In the second diagram the plug has been adjusted four inches.

Now by simply releasing the single pinch-bolt, the hub is moved back four inches, ready for another 4-inch plug adjustment.

This is repeated twice, as shown in the progressive drawings. At the end, the plug has been adjusted a full twelve inches, by simply releasing the pinch-bolt and setting the coupling hub back twice.

It has no flexible lacings, bushings, springs or other flexible materials. Instead, a new mechanical principle is used which eliminates the necessity for ever shutting down for coupling repairs.

Do not fail to send for the free pamphlet, "Solving Coupling Problems in Paper Mills." It explains this Jordan coupling in full, as well as other Fast's Couplings for every coupling problem of the pulp and paper industry.

GET FREE PAMPHLET

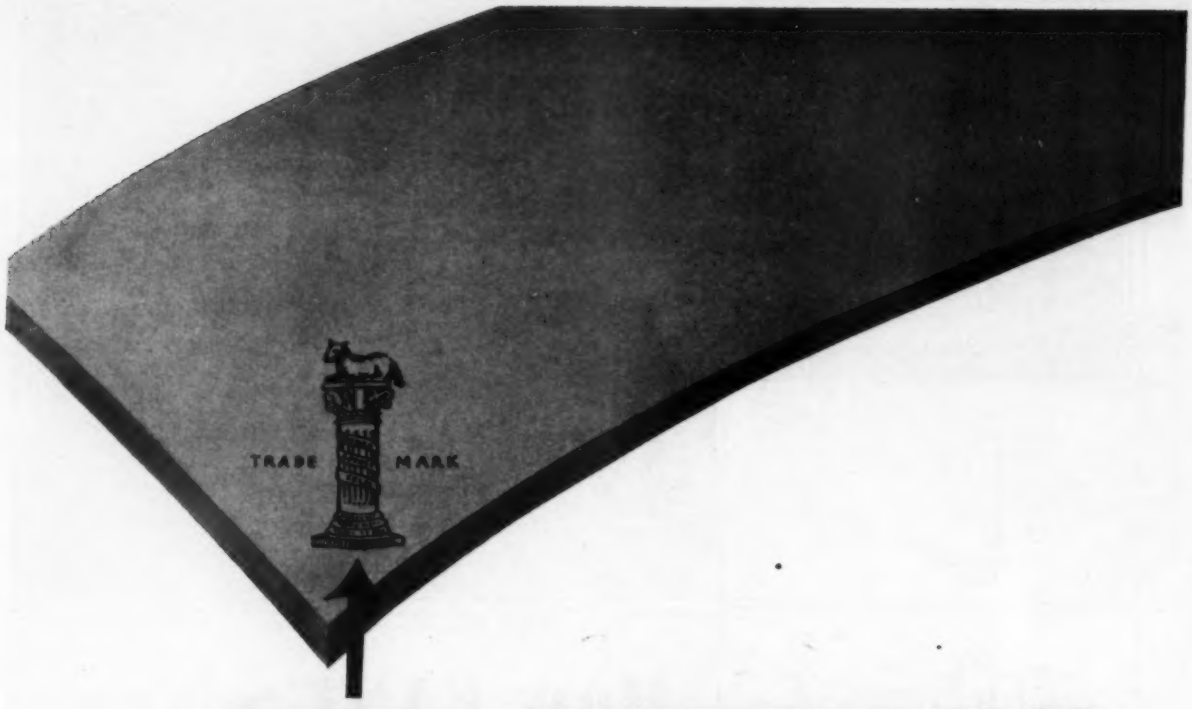
The Bartlett Hayward Company
213 Scott Street - - Baltimore, Md.

Please send me the free pamphlet on "Solving Coupling Problems in Paper Mills."

*Name*_____

*Name of Mill*_____

*Address*_____



THIS MARK SAYS

"I am the mark of quality . . .

"I am your assurance of service and satisfaction . . ."

This, and much more would be said if our trade mark on each felt could talk.

During 1932 let Appleton Felts help solve your felt problems. Write us anytime for details.

It would say that Appleton Felts have kept pace with the progress of paper making processes . . . that Appleton Felts can be nothing other than quality products . . . that Appleton Felts are made for the definite requirements of the customer . . . that Appleton Felts are today standard for design, quality and service . . . that they have in them everything an accumulated experience of 40 years can put there . . .

And, on for pages and pages. The reasons why Appleton Felts are good are seemingly endless, but to you the use of Appleton Felts is your assurance of quality in your product.

APPLETON WOOLEN MILLS
Appleton, Wisconsin

Appleton
Felts and Jackets

Let's get this

STRAIGHT–

this matter of centrifugal pump efficiencies. What does a promise of an exceptionally high efficiency avail if under ordinary operation it is not maintained for a reasonable period? The highest efficiency does not necessarily imply lasting efficiency nor durable construction. It may even carry a doubt of constructive designing. Some facts on this matter . . . facts that you may want to consider . . . are contained in a folder that is yours for the asking . . . Specify Bulletin 51.

WARREN STEAM PUMP CO.

Incorporated **· WARREN, MASSACHUSETTS**

AGENCIES IN ALL PRINCIPAL CITIES

$500
REWARD

will be paid to
the person
supplying me
or the local
police, with the
first information
leading to a
successful prosecution
of any person or firm
manufacturing paper outside
the Irish Free State, bearing
the watermarked words

"PAPER GUARANTEED MADE IN IRELAND BY SWIFT BROOK PAPER MILLS LTD."

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"PAPER GUARANTEED MADE IN CO. DUBLIN BY SWIFT BROOK PAPER MILLS LTD."

Philip O'Reilly,
Solicitor,
19 St. Andrew Street,
Dublin, I. F. S.

TITANOX

CONSIDER THESE IMPORTANT PROPERTIES OF TITANOX-B

In your search for materials to improve the opacity and finish of coated stocks, don't overlook these important characteristics of Titanox-B (barium base). • (1) Fine particle size. (2) Exceptional brightness. (3) High color value. (4) Chemical inertness. (5) High refractive index. (6) Moderately high bulking value. • Made under carefully controlled conditions, and subjected to exhaustive physical and chemical tests at all critical points of manufacture, TITANOX-B (barium base) is noted for its uniformity of color, particle fineness, ease of dispersion and other characteristics which contribute to paper quality. • Paper manufacturers have also found that Pure Titanium Oxide (TiO_2)—another of our products—produces excellent results when used as a filler for book and magazine stocks. • On the basis of results secured by many leading paper makers, it will pay you to test Titanox pigments in your stocks. Write for helpful information.

TITANIUM PIGMENT CO., INC.

Manufacturers of.....TITANOX-B (Barium Base)
TITANOX-C (Calcium Base)...**PURE TITANIUM OXIDE**

60 John Street, New York, N. Y.; Carondelet Station, St. Louis, Missouri; Pacific Coast Distributor: National Lead Company of California, 2240 24th Street, San Francisco, California; Canadian Distributor: Wilson, Paterson, Gifford, Ltd., 101 Murray Street, Montreal — 132 St. Helen's Avenue, Toronto, Ontario.

Buy Rolls by the Amount of Cushion . . .

Only Goodrich can make Vulcalock rolls. For Vulcalock is an exclusive Goodrich development. A process that makes it possible to vulcanize soft rubber directly to a metal core, with no "dead" hard rubber base.

Old-Type Roll about to be re-covered. Note "dead" hard rubber base (¼" thick). Note that the soft rubber cushion is worn down to about ¼". If roll had been covered by the Vulcalock process, it would still have about ½" of soft rubber.

Don't pay for Hard Rubber

BUY a Goodrich "Vulcalock" roll and you get soft rubber . . . 100% live cushioning . . . from outer surface to metal core. Buy any other make of roll, and you have to take a "dead" hard rubber base.

In a roll with 1" cover this hard rubber base is about ¼" thick. That means that for every dollar you put in any roll other than a Goodrich "Vulcalock" roll, you get only about seventy-five cents' worth of soft rubber cushion; the remaining twenty-five cents' is wasted on a hard rubber base that has no cushioning value whatsoever.

Bad enough to waste a quarter of the purchase price on "dead" hard rubber; but the loss doesn't end there. When it's time to re-cover a hard rubber base roll, the metal core has to be re-rough-threaded.

That means a loss of metal. The roll has to be built up to the required outside diameter by a thickening of the rubber. Each time a hard rubber base roll is re-covered, you have to pay for a thicker cover. Frequently the makers of the hard-rubber-base rolls have to tamper with the formula for the soft rubber cover so that cover and hard rubber base can be vulcanized at the same time.

Goodrich "Vulcalock" rolls are the *only* rolls that do not have a hard rubber base.

We should like to send you literature describing "Vulcalock" rolls in greater detail, and shall be pleased to quote prices on specific jobs. Address your inquiries, without obligation, to The B. F. Goodrich Rubber Company, (Est. 1870) Akron, Ohio.

B. F. Goodrich

VULCALOCK PAPER MILL ROLLS

Balancing the Budget

BALANCING the budget is the order of the day in this country. Everybody is doing it because everybody's income has been cut so drastically by depression and deflation during the past three years that there is now no alternative left but to bring all budgeted expenditures down into balance with prospective incomes.

In spite of the unparalleled hard times, in spite of the most tragic curtailment of income ever known, our legislators in Washington seem to be entirely oblivious to those facts. They alone have refused to be adjusted to conditions which the whole body of their constituents without exception are suffering under. Soaking the poor rich, raising the taxes on vanished incomes and refusing to reduce the governmental expenditures and bureaucratic outlay, constitutes the most outstanding exhibition of purblind taxeating selfishness on record in any legislative body at any time on earth.

However, let us remember that our senators and congressmen are the servants of the people. The people are the masters and will not take orders from their rebellious and contemptuous servants. Taxpayers are more powerful than taxeaters or taxspenders. There is a rude awakening ahead of the purblind babies at Washington.

The budget will be balanced eventually.

A grim and determined electorate has decided that question. The present occupants of the congressional and senatorial offices may not have anything to do with the final balance. That is one certain fact in these days of uncertainty.

Balancing the industrial, commercial, corporate and individual budgets is progressing by leaps and bounds. While the progress is satisfactory, it is anything but pleasant or gratifying.

High grade stocks and bonds of blue chip industrial corporations are still being thrown overboard with no regard to investment nor book value. Who wants to own or buy securities of any corporation which cannot return a profit? Evidently no one in these United States. Evidently there are too many producers and too much produced at a deficit.

This paradox of plenty has bankrupted industry and stagnated commerce.

We are stalled on high.

What is the remedy?

Balance the budget! Bring production of all lines of commodities into balance with the demand, no matter how small the demand.

The paper industry is balancing its budget. Paper products are making progress downward. Prices for paper products are tending downward. Demand for paper is downward. The mill production is downward. Some day, when the budgets are all balanced, there will come a change. Supply of commodities will fall substantially under the bedrock demand for them and shortage will be evident. Then, an excessive demand will appear.

Then the populace will become bulls and gore the hell out of the bears and a new order of business will come to pass.

But, first, we must balance the budget.

+ EDITORIAL +

Support for Organized Effort

THE appeal of President Willson of the American Paper and Pulp Association for a greater measure of support for the association at the present time is deserving of the utmost consideration on the part of the pulp and paper industry of the country. Under its changed management since the annual meeting in February, important economies have been effected in its operation but if the association is to be restricted in its operations by lack of funds the industry will suffer.

It is a time when all who are benefited in any degree by the work of a central association should rally to its support and hold up the hands of its officers. The work in which it is engaged is of national importance, affecting every division of the paper industry. By holding together unorganized groups and serving as a clearing house of information on problems of national importance, the association has rendered valuable service, not the least of which may be counted the encouragement of individual group association work. The organization of group associations is made possible only through the guidance and support of a central organization.

A national body like the American Paper and Pulp Association, composed of groups of manufacturers having in many instances conflicting interests, must be careful to avoid taking sides on controversial subjects, but must always steer a wise course, so as to avoid taking a definite stand on such disputed questions as tariffs or equalizing values on imported products manufactured or used by its members. The association aims to keep the industry informed on both national and world conditions and thus be in a position when necessary to clarify controversial matters.

Two of the larger groups of pulp and paper manufacturers are now organized as the Kraft Institute and Sulphite Institute, respectively. After struggling with the problems of the kraft industry for more than two years, the Kraft Institute has succeeded in developing greater co-operation among manufacturers, and some encouraging results have been obtained in coping with the problem of overproduction, as well as in stabilizing prices and improving market conditions generally. All of this has contributed to a better feeling among the manufacturers of kraft pulp and paper and has been encouraging as well to the wholesalers of these products.

A reflection of improved conditions in the kraft industry is to be found in the sulphite industry, which has organized its own Sulphite Institute for the purpose of bringing about better conditions. On account of the greater variety and number of sulphite pulp products, troubles in that industry are naturally more difficult to straighten out. Reports indicate, however, that an improvement has already set in on one grade of sulphite bond through efforts to bring about a greater degree of co-operation among manufacturers. In the present disturbed condition of trade it should be taken as an encouraging indication that the manufacturers of sulphite pulp and paper are coming together in a united effort to stabilize the market and everybody will wish success to their efforts.

That conditions are gradually improving has been manifested in various ways during the month. A number of the smaller groups of manufacturers of special papers have been stimulated by the example of the kraft and sulphite groups to maintain prices at least a peg or two above the cost of manufacture and there is less disposition seen to force sales at a sacrifice of profits.

This Promises to Be a Profitable Convention

ALL indications point to a most successful gathering at the annual convention of the American Pulp and Paper Mill Superintendents Association at the Hotel Statler, Buffalo, June 2, 3 and 4, 1932. In a ringing call for the convention, issued by President Kelly, mill managers and executives are urged to facilitate attendance of their production men. It is pointed out by him that it would be false economy to put obstacles in the way of their attending the meeting, since in addition to a discussion of ways and means of reducing the cost of paper manufacture, led by cost accounting experts, papers will be presented dealing with pulp and paper problems encountered daily in the mill.

One of the principal attractions of the meeting will be an exhibit of methods of economical operation of pulp and paper mill departments, with types of control apparatus in actual operation, at which engineers and experts in the management of machinery and apparatus will be present to demonstrate the modernization of machinery and processes that have been effected during the interval since the last meeting. In order to afford every opportunity for their inspection by visiting superintendents and for the purpose of adequate demonstration, the exhibits will be arranged on the same floor as the convention hall.

A general Question Box is another feature that should be of great value as affording a means for the interchange of views and experience. Fred. J. Rooney, Box 357, Lockport, N. Y., invites members to send in advance to him written outlines of problems of interest so that all questions for discussion may be assembled in orderly fashion for presentation at the meeting. The Question Box is to be conducted during the convention by Roy H. Kelly, president of the association, who is general superintendent of the Marathon Paper Mills Company, Rothschild, Wis.

In addition to what has been already said, arrangements have been made for a general discussion of the superintendent's responsibilities to management, a most

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This plain statement of fact would be endorsed by thousands of plant executives who already know from experience how Dayton Cog-Belt Drives reduce belt expense. And the reason is obvious.

Dayton Cog-Belts are "built to bend." Their patented cog construction gives them extreme flexibility—without distortion, buckling, or rippling. Pulleys are smaller—centers are shorter—floor space is saved.

And another important feature—the sides are *die-cut*—not molded. They fit the V-groove pulleys *accurately* and *permanently.* And die-cut sides, with their raw edge contact surface, assure an amazingly tenacious grip. No slipping or sliding. No loss of power. Speeds are positive. Machines run more smoothly. Vibration is eliminated. Production is greatly increased.

Dayton Cog-Belt Drives cost less to buy—less to maintain. And their *life is two and three times longer.* Little wonder they cut belt expense in half or more. Not only that—they pay for themselves in the many other advantages they offer. These are facts . . . easily and quickly proved.

Wouldn't you like to have the proof—without obligating yourself in any way? Just write or wire.

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important subject; and there will be papers presented which have to do with innovations or improvements in the manufacture of different classes of pulp, paper and board.

In his plea for a representative attendance at the annual meeting, President Kelly also makes the impressive point that mill managers and executives will advance the interests of their companies by allowing their production men to come in personal contact with others in like positions for the exchange of information, experience and knowledge, a plea which should be convincing.

There is no question but that the convention will yield notable contributions to a superintendent's store of practical information and knowledge of improvements in machinery and processes, and it is to be hoped that the numbers present will be as large as in previous years, if not larger, because a large attendance will in itself be an expression of confidence in the future outlook, and *confidence* in the return of business and prosperity is what is chiefly needed at present.

The Earliest Paper Manufactured

RESPONSIBLE historians of papermaking are generally agreed that paper made of the fibrous pulp of plants is of Chinese invention and had its origin early in the first century of the Christian era. During a recent lecture tour of the United States, Dr. Sven Hedin, the great Swedish explorer, spoke in Chicago, and some of the statements attributed to him concerning specimens of early Chinese manuscripts on paper unearthed by him during his expeditions in Chinese Turkestan and across the Gobi Desert, attracted wide attention. However, the newspaper reports of the lecture are likely to prove misleading, since 150 A.D. was given as the earliest date recorded for a Chinese paper manuscript; and it appears to be well established that paper originated in China at a much earlier date, authentic Chinese paper from a period of 25 A.D. being in the possession of the British Museum. These specimens are regarded by the Museum authorities as the earliest ancient specimens of paper known to exist in the world.

The papers in the British Museum were discovered by Sir Aurel Stein, another world-renowned explorer, in an antiquarian research expedition in Chinese Turkestan and are described by him in his book *Ruins of Desert Cathay,* published by Macmillan & Co. Some of the paper fragments and rolls of manuscripts date from the period of the Eastern Han dynasty A.D. 25-220. The manuscripts were in the form of long rolls, the sheets of paper from which the rolls were made up having been joined from end to end by pieces measuring 12 to 15 inches deep, of oblong pattern rather than square. It is stated by the writer of one of these ancient manuscripts that he used twenty-eight sheets of paper in making up the roll; but another roll of manuscript measured seventy feet in length, made up of separate pieces pasted end to end. These early paper manuscripts were dug up by Stein on the site of an old watch tower on the western extension of the Great Wall of China, and in an ancient temple chamber near Tumhuang, which had been walled up for 900 years. These finds of Stein's thus put the invention of paper in China back to the first quarter of the first century A.D., or 80 to 100 years earlier than the date generally given.

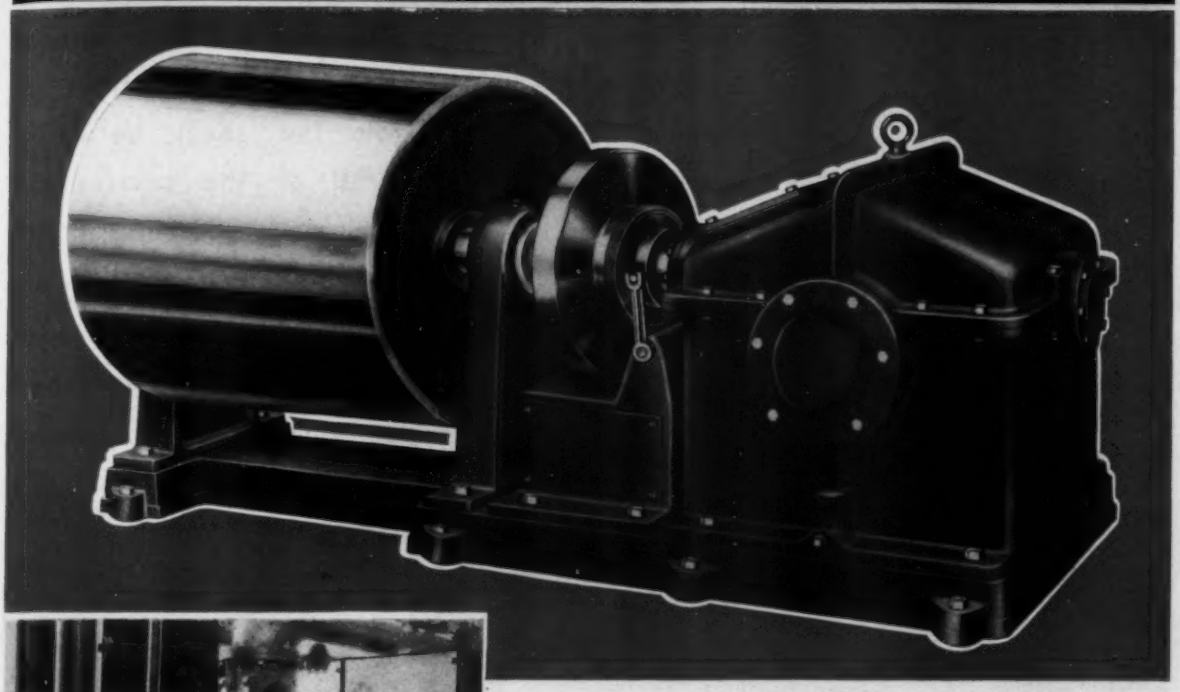
In Sven Hedin's account of the ancient Chinese manuscripts uncovered by him in "The Lost City of Lou-lan," Eastern Turkestan, mention is made of a letter written by one Chang Ch'ou, a mandarin of the Han dynasty, to a friend about 150 A.D., and this was referred to in the newspaper reports as the first writing on paper. An account of Hedin's discoveries of Chinese paper manuscripts is given in a volume by Prof. August Conrady, published in German in 1920 by Generalstatens Litografiska Anstalt, a publishing firm of Stockholm. Photographs of the manuscripts bearing Chinese characters are reproduced in the volume, together with translations in the German language. In this connection, it should be stated that in Sven Hedin's latest book, *Across the Gobi Desert,* published this month by E. P. Dutton & Co., a reference is given in the preface to the discovery by his archaeologist, Folke Bergman, of a mass of paper manuscripts, in six different languages, which have yet to be deciphered, translated and published.

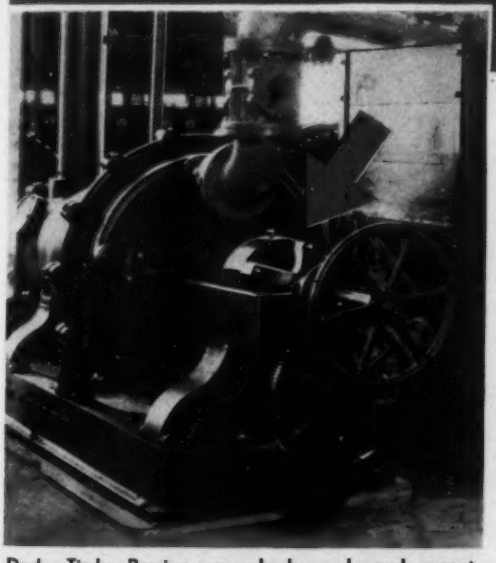
It is of interest to note that the first authentic account of the sources of the material employed by the Chinese papermakers was given by the late Ernest Henry Wilson ("Chinese Wilson"), a distinguished economic botanist, who was connected at the time of his death with the Arnold Arboretum of Harvard University; it will be found in his book entitled *A Naturalist in Western China,* published by Doubleday, Doran & Co.

Among the interesting observations made by Wilson is that the so-called Chinese rice paper is not made from rice straw at all, but from the pitch of a shrub closely allied to the common ivy of Europe and known botanically as *Tetrapanax papyrifera.* Rice straw is employed only in the manufacture of the commoner varieties of paper in daily use, mixed with the stems of a reed called "Mao-ts'ao," the botanical name of which is *Imperia arundinacea* var. *Koenigii.*

It remains to be stated that while there have been many and varied accounts of the early manufacture of paper, perhaps the most interesting and authentic of these is that of Lord Redesdale as given in his address as president of the Royal Photographic Society of Great Britain in 1913.

THE DODGE HYPOID DRIVE WITH REMOTE OR MANUAL CONTROL





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This drive embodies practically every feature of the electrical drive, including remote control and offers many desirable additional features, such as lower maintenance costs and quicker repairs because of the use of standard parts and ease with which any trouble may be located.

Send for Bulletin A-196, giving complete information on this new line.

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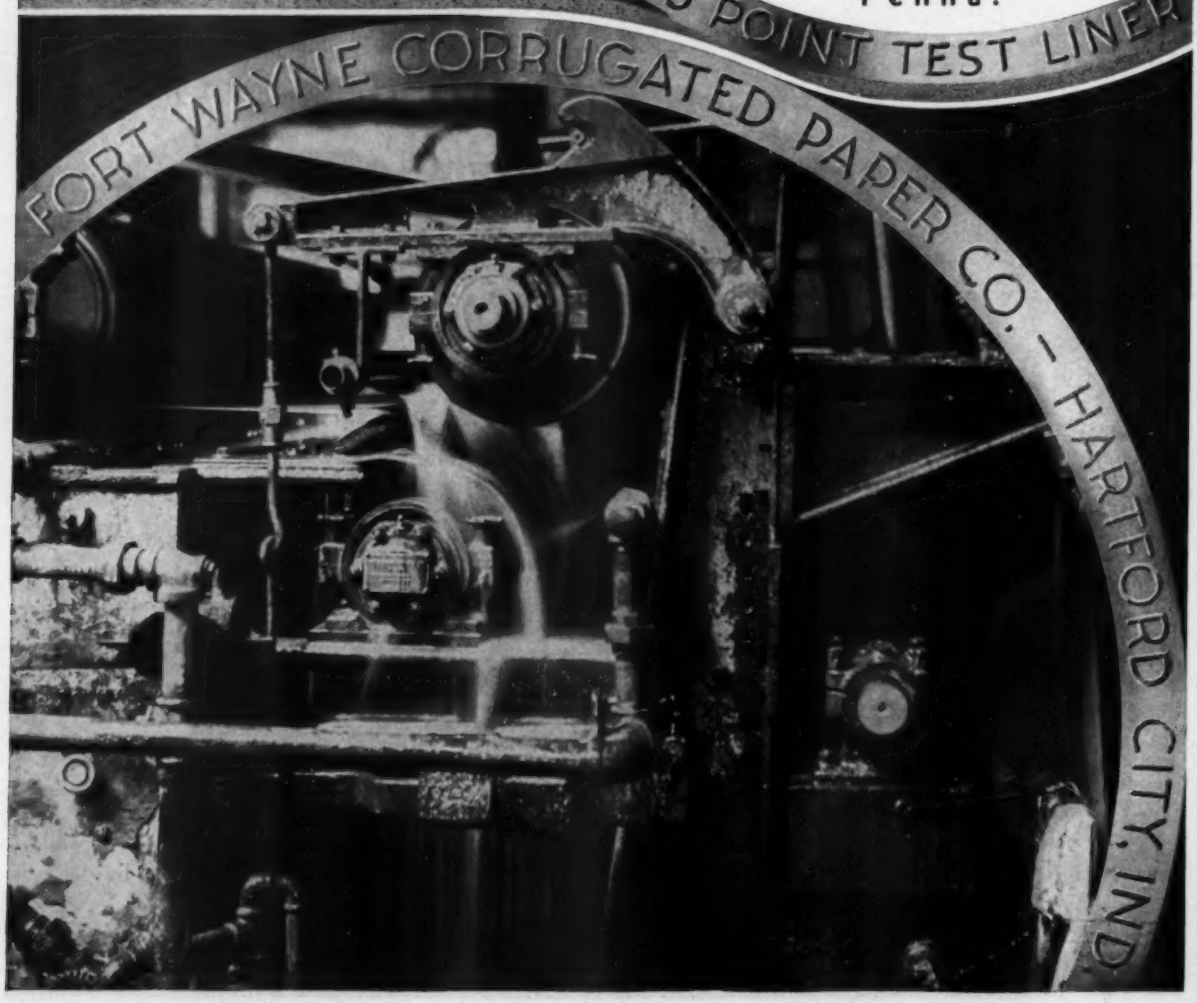

THOMAS EDISON once said, "We humans will go to almost any pains to avoid thinking"

Superintendents Must Think!

TO ACCELERATE
YOUR THINKING
ATTEND THE—

Thirteenth Annual National Convention

The American Pulp and Paper Mill Superintendents Association

June 2, 3, 4, 1932

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FRIDAY—JUNE 3rd, morning and afternoon: Papers, Discussions and Mill Visits.

SATURDAY—JUNE 4th, morning: Business meeting, Papers and Question Box.

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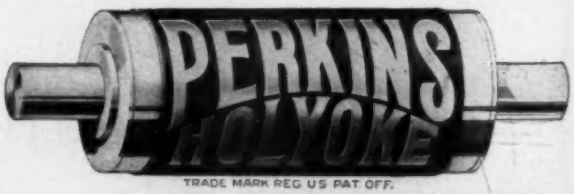

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of centrifugal pumps, stuffing box pressures and gland leakages have been a problem on high pressure models. Goulds research solved the problem with a new type of stuffing box. Here is how this was done.

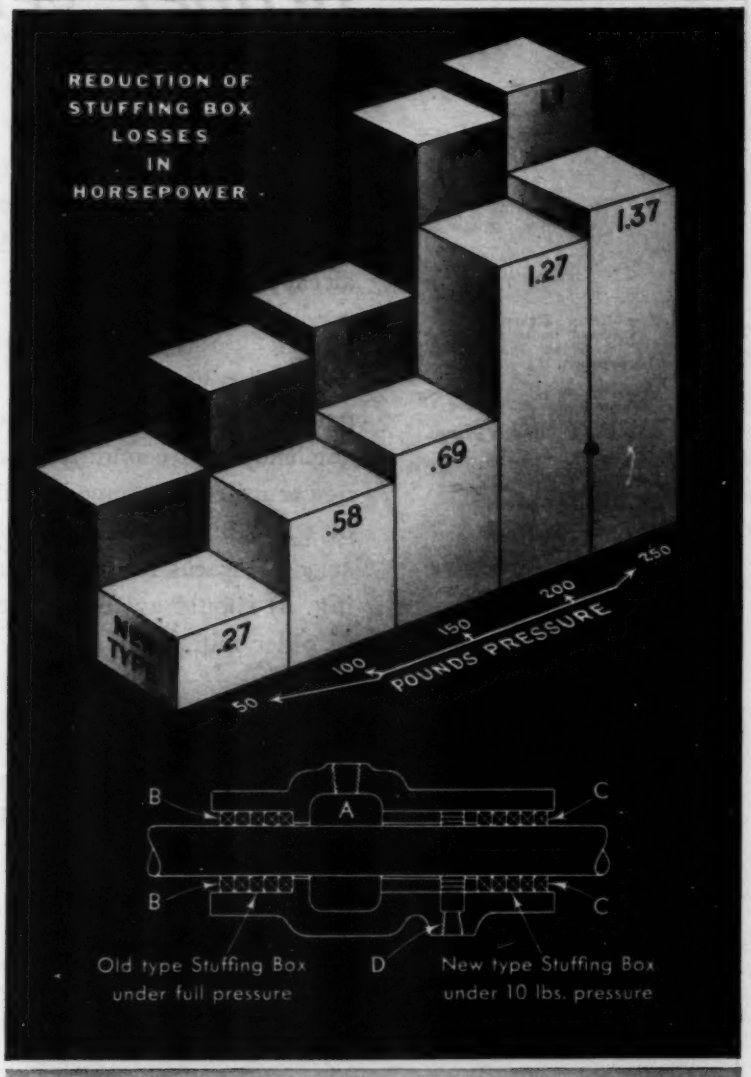
A testing device was built with a liquid pressure chamber in the center (A), with the old trouble-making type of stuffing box (B) on one end, and the new type (C) on the other.

B, subject to full pressure, requires tightly drawn gland to prevent excessive leakage. Tight gland results in: heating of box, scoring or excessive wear of shaft, or sleeves, shortened life of packing, loss of efficiency from leakage and friction.

Pressure in C is throttled and relieved through by-pass pipe (D). Pressures up to 250 lbs. were applied, but because of controlled by-pass, they never exceeded 10 lbs. in the new stuffing box.

Gland was run loose, greatly lengthening life of packing, and protecting sleeves and shaft. Efficiency loss was reduced and leakage loss was negligible.

Such research is a constant part of Goulds practice. It costs over $1500 weekly. To paper mill engineers who recognize durability, reliability and economy of operation, as the important considerations in a pump purchase, Goulds research is a promise of continuously better performance! Goulds Pumps Inc., Seneca Falls, N. Y. Branches and agents in principal cities. World's largest makers of pumps exclusively.



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MILL MODERNIZATION MUST INCLUDE

proper ventilation

For most mills a definite modernization program must soon be carried out to fit them for the new competitive conditions that have developed during the past few years. The modernization movement is already under way in some sections of the industry.

In making your plans, give full consideration to the part that proper heating and ventilating plays in the efficiency and economy of machine operation. The newer mills that have established the new standards of operating efficiency are equipped with the necessary apparatus to insure proper heating and ventilating. It should not be neglected in the modernization of older mills.

Ross engineers are best qualified to help you determine heating, ventilating and conditioning requirements for your particular plant and equipment. Use the reliable Ross service.

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THE PAPER INDUSTRY
A MONTHLY EDUCATIONAL JOURNAL

Put Quality in Your Product

Then tell the whole world about it

By Z. W. RANCK, President
The Crystal Tissue Company

IT is a surprising thing how, even in times like these, quality is so important to so many people. I sometimes think it is even more important in a time like this than it is at the height of prosperity. Folks expect more for their money in depression times and they stress the quality of a product more.

This was brought home to me forcibly a couple of weeks ago by an article in *Printers Ink*. It was a report on a survey made last summer among 15,000 magazine readers. These were interviewed personally by trained investigators in order to determine, among other things, which basic advertising appeals commanded the most attention.

It might easily be supposed that in the summer of the year 1931, if ever, economy or price would have the strongest appeal. Many advertising men thought so anyway. Ranked by the number of advertisements appearing in the four magazines covered by the survey, the economy appeal held first place.

But the fellow who signs on the dotted line wasn't as interested in economy as the advertising men supposed. When ranked by the number of advertisements noted and read by men and women, those with the economy appeal were way down in the list. Quality was right up at the top.

Quality ranked first among the basic appeals noted by the men and third among those noted by the women. Women found only romance and vanity more interesting to read about than quality.

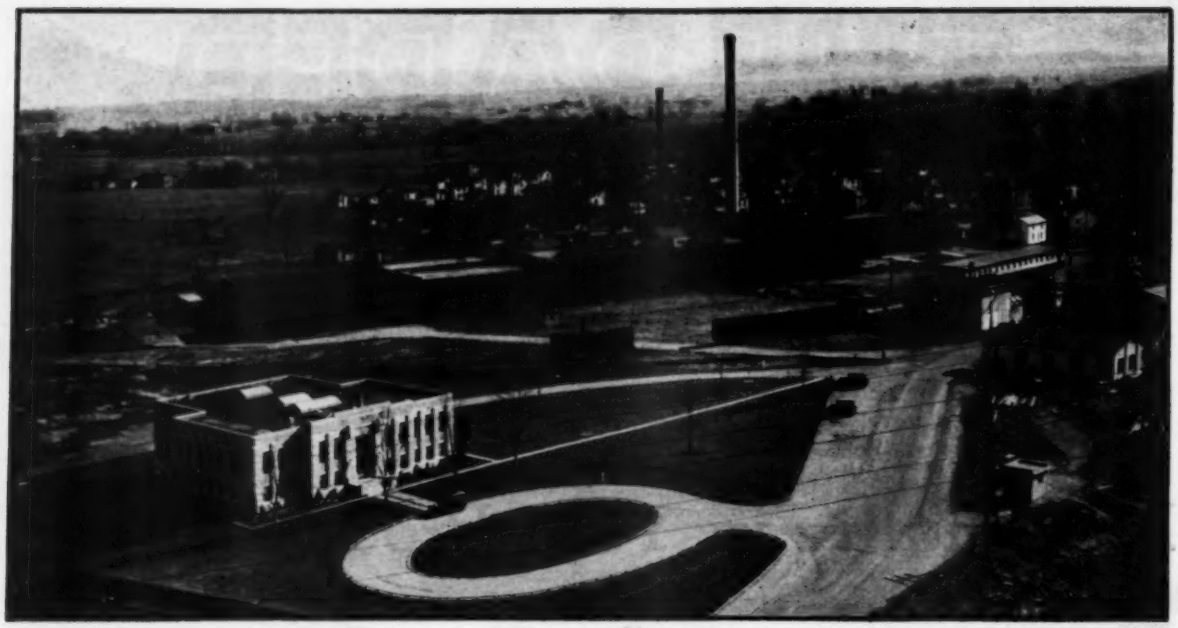
So, in spite of the overemphasis on price these days (or perhaps because of it) quality still has a powerful sales appeal. We of The Crystal Tissue Company think so anyway. We are ready to bank on quality in good years and bad; in fact, we have done so for many years. Our experience during those years has convinced us that if more paper merchants and more mills would use and emphasize the natural appeal which a quality product has, they would make more profit.

Of course, you can't argue quality into a product; you have to put it there. And that isn't always easy, especially with a product like tissue paper. Tissue is less than one-thousandth of an inch thick and its quality is determined by the proper control of a large number of variables. Moreover, there are certain definite limitations of cost which must always be considered if large markets are to be tapped. Our effort at Crystal has been to put out the highest possible quality at the lowest possible price. We have endeavored to keep our distributors in a competitive position with a superior sheet of paper.

No doubt that is the objective of most mills, and if we at Crystal have succeeded with it more than some others, it has been due to several broad policies which have gradually been worked out. Not that these policies were thought out and adopted on one certain date. They grew up with the mill. But that is all the more reason why they have such an important bearing on maintaining the quality of Crystal Tissue.

The most important of these has been the policy of developing in the Crystal mill a definite "Quality" morale. By that I mean making every last one of the 300 men and women who produce Crystal Tissue feel a real pride in and a personal responsibility for the kind of paper shipped out. That's not as easy as it sounds. It takes time, but the beautiful thing about it is that it is cumulative. Once it gets started, it keeps rolling by its own momentum. With only a little directing, it becomes a powerful ally in maintaining quality in a product. In fact, it is almost impossible to have consistent high quality without it.

This type of morale started in the Crystal mill many

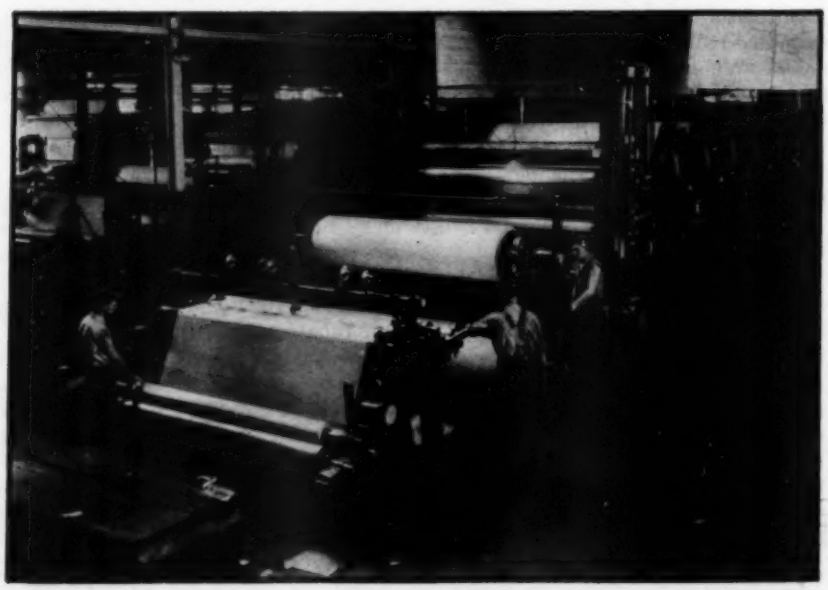


The Crystal Mill from the air. The handsome new administration building is in the foreground with the new mill behind it. The lower end of the old mill is shown at the extreme right.

years ago when the mill was small. I think it began as a result of spending a great deal of time in the mill myself, talking with the men, getting acquainted with them and transmitting to them the enthusiasm I have always had for high quality. I often wish I could spend more time in the mill now but my time is taken up by so many things that I have to stick much closer to the office than I'd like to and the job of maintaining the "quality" morale falls on someone else.

We realize now how important it is and we do try to at least direct this force. We have foremen's meetings; we enter the National Safety contests; we encourage worth while suggestions; we issue a homely little plant magazine; we try, without being noisy or paternalistic, to help any of our employees who may be in trouble. We try to make each individual feel that he has a part to play in making our business successful—as indeed he has. And, with the few exceptions which can be found in any industrial plant, I believe that every one of our workers, in the mill and in the office, is 100 per cent sold on the idea of maintaining the quality of our product.

The second policy we have followed is that of keeping our machinery and equipment in first class condition and up-to-date. You can't make good paper on a worn out paper machine. Neither, of course, can you replace paper machines every year or two, but you can keep them up and prevent them from wearing



The dry ends of three of the four machines in the new mill. All machines are kept up-to-date by the addition of new equipment as it is developed. Only by this can quality be maintained consistently.

out. And from time to time you can take out an old machine and replace it with a new one.

That's what has been done at Crystal. In the past ten years we have added or replaced four paper machines. And from time to time there has been added to all of our machines new equipment which has kept them modern and up to date.

In making these improvements we have not depended entirely on developments made outside our plant. We have at the Crystal mill a group of papermakers, who, in their knowledge of the manufacture of tissue, at least, are second to none in the country. These men are constantly on the alert to develop new methods and improvements which are invaluable in maintaining our position in the industry. They have developed many devices and attachments which enable us to get the maximum amount of production from each machine, often, at the same time improving the quality of Crystal Tissue.

After quality is attained in a product, it is not sufficient to sit back and wait for the world to wear a beaten path to your door. That may work all right in time but it is too slow for this modern age. At least we have always felt so. We have worked on the principle that since we have quality, and since we know we have it, we need have no hesitancy in going out and telling the whole wide world about it.

So our salesmen and our executives have been talking up quality in their contacts with customers for years. Moreover, we have advertised to the paper trade consistently for a long time using trade publications, direct mail, personal letters and even a little monthly house organ. Our message in all of this advertising has been consistent; the thought that has been emphasized over and over again is that quality pays. This is the idea we firmly believe in because our experience has shown it to be true.

All of our advertising has not been directed to the paper trade, either. We have gone a step farther and have advertised directly to the consumer. Each year more and more of our advertising appropriation is spent in telling the user of tissue about Crystal products.

For several years the department store field has been covered by series of attractive direct mail pieces and by magazine advertisements. Laundries are getting a trade magazine campaign this year. Gift shops have been covered and we are almost ready to extend this type of advertising into other fields.

This advertising, combined with the sincere efforts put forth by our distributors, has familiarized many consumers with Crystal Tissue and has established in their minds the fact that Crystal is a dependable, high quality sheet. It has helped tremendously in enabling our customers to build up a steady, profitable business on our products.

After all, profit is the elusive thing we are all seeking, and it is all too lacking in the industry today. One reason for this, we believe, is the overemphasis in the past few years on price. The survey mentioned above would indicate that even in these times, price shouting isn't as effective as it is supposed to be. Quality always has had and still does have a powerful sales appeal. It may be well worth while to work "Quality" a little harder.

U. S. Bureau Tests of Papers

THE U. S. Bureau of Standards has made tests of strength, chemical purity, and stability of eight unsized papers of bond type made in the Bureau paper mill from various kinds of rags. The kinds of rags used in making these papers were: Twos and blues, No. 1 old whites, new white cottons, new white linens, and dark linens. These materials were tested for alpha cellulose content and copper number and the same tests are in progress on the half-stocks prepared from these rags. The used grades of cotton rags tested about 87 per cent alpha cellulose and the new grades about 94 per cent. New linens were 91 per cent and dark linens 83 per cent. Copper numbers gave practically the same information regarding fiber purity.

The unsized papers made from "Twos and blues" and from "No. 1 old whites" were relatively weak, having a folding endurance of about 200 double folds or less. The papers made from new cotton rag half-stocks were, of course, of very high strength, averaging 4,000 to 5,000 double folds depending upon the duration of beating. The papers containing linen were somewhat higher in strength.

The papers prepared from new white cottons had a very high degree of chemical purity, the alpha cellulose content being nearly 98 per cent and the copper number 0.30. For the papers made from the used varieties of rags these values were respectively about 94 per cent and 0.65.

All the papers were of high stability, none showing any loss in folding endurance after the heat treatment. The papers made from new rags decreased in alpha cellulose content as a result of the heat treatment about 0.5 per cent, while for papers made from the used rags this loss was about 1.0 per cent. These results indicate that papers of very high stability can be made from used rags with careful processing, even though it was impossible to obtain very great strength values.

Permanence of Old Oriental Papers Due to Processing

Of six old oriental papers tested by the Bureau, two were composed of mulberry fibers, and the other four appear to consist of ramie fibers, with possibly some admixture of flax fibers. The papers were from China and the stated dates of manufacture ranged from the 6th to the 10th century. The papers were strong and from light to dark brown in color. Other old oriental papers previously tested consisted of mitsumata and bamboo fibers. The variety of fibrous materials found in these old permanent papers adds to much other evidence secured by the Bureau to the effect, that the processing of paper fibers is the important consideration and not the source. Old papers such as these were made by hand, the only bleaching was by sunlight, and the only sizing materials were starch or glue which have little or no deteriorative effect. The mechanical papermaking processes necessary for the rapid production of the modern papers, and the cooking, bleaching and rosin sizing materials used to obtain the required whiteness and writing qualities, all require very careful control to produce papers matching the early ones in permanence.

CURRENT THOUGHT

BY WILLIAM SIBLEY

The Newspapermen's Special

THIS being written on Sunday, April 17th, reminds me that just thirteen years ago today I Sundayed in Stenay, France, and enjoyed the privilege of wandering through the rooms of the German Crown Prince's headquarters — or rather, the house which had been his headquarters during German occupation of this territory—and took rather keen delight in seeing evidences of his physical cowardice by exploring, for myself, his dugout, sunk sixty feet below the surface of the ground, a dugout equipped with nearly every convenience possible in such a location, including electric lights, ventilating system and an ample stock of choice wines.

Being in this reminiscent mood, let me tell you the story of The Newspapermen's Special, one of the smartest things the men in charge of the American Expeditionary Forces ever did. It happened thus:

During the first four months of 1919, I was stationed in Le Mans, assigned to the Road Department (highway reconstruction work), and filling a place which was comparable to that of an office manager. While there, one of the issues of *The Stars and Stripes* (an A. E. F. house organ) carried a little 50-line request on its front page, asking all and sundry who had been reporters, magazine writers, or editorial men in civilian life to register. Being in that category, and expecting to again undertake the precarious livelihood of a writer when discharged from military service, I registered. Then, in the crush of road work, promptly forgot about the whole matter.

Some six or eight weeks later, during a particularly busy morning, the telephone rang. I answered it with the accustomed announcement "Sibley, Road Department." Whereupon the voice at the other end asked "Is there a Private William Sibley in your organization?" "Speaking," I replied. "Well," said the voice, "this is the town major, and I have an order here that requires that you report to Colonel Sweeney at the Gare Montparnasse in Paris, tomorrow morning at eleven o'clock. You are to take no provisions of any kind except one change of linen; no pack, no barracks bag, no mess-kit. Nothing but one change of linen. Come on down to the office and I will give you your transportation for the eight-thirty train tonight."

And I had no more idea then than you do now what it was all about. I didn't know Colonel Sweeney from Adam's off-ox, and to be ordered to travel unhampered by necessary property, was unheard of. But the objective was Paris, and I was no different than any of the other two million soldiers in that to go to Paris was the most that could be desired. With a happy heart and a measure of anticipation inflated by curiosity, I lost no time obtaining my travel orders and transportation.

The following morning, I found myself in the great arched concourse of the Gare Montparnasse. The place was literally alive with American soldiers of every conceivable shape, complexion and rank—majors, master engineers, corporals, colonels and captains; privates, sergeants, lieutenants, medical men, air-service men and men from every other division of the army—and all there to meet Colonel Sweeney whom no one knew, and for a purpose no one understood.

Finally, about thirty minutes after scheduled time, a gold-leafed major stepped up on a chair, blew a sergeant's whistle to attract the attention of the crowd, commanded silence, and said: "Men! You are all here at the command of General Headquarters to meet Colonel Sweeney. May I say that I represent him? And may I tell you what you most want to know—that is, *why* you are here?

"We are undertaking something that may be considered a little unusual, but which is a typically American enterprise. It was recognized by the editor of the *Stars and Stripes* sometime ago that there were a great many newspaper men, journalists, professional writers, and other men whose business it is to write, who have been officers and soldiers in the A. E. F., but whose duties have so tied them down to their respective divisions that their view of the operations of the A. E. F. as a whole was limited. So it was suggested as far back as last January that these men be given an opportunity to see for themselves and be told the truth regarding the A. E. F. and its operations. May I remind you that each of you men has voluntarily registered as a newspaper man or writer. It was your own registration that has given us an opportunity to select you and order you here for a trip of the complete A. E. F. Here is what we propose to do:

"Out there in the yards you will find Hospital Train No. 63. It is a fourteen-coach train, made in America for American soldiers. We are all going to get on that train, and we are going to tour the A. E. F. We are going to see for ourselves, and be told by authorities, all the various operations of the A. E. F. This is an educational trip—not a junket, nor a mere sight-seeing excursion. It is a trip to let you professional writers know what happened and why. There is absolutely no propaganda in it, there is no attempt to show you distorted facts, no attempt to bend you or warp you so that you will write along any particular line. There are no politics in this trip, either party, personal or army. There will be no camouflage; we are merely going to show you things as they are. We are going to tell you the mistakes we made, the defeats we suf-

fered, and the reasons why as we now know them. We are also going to show you what has been done that proved meritorious. On this trip there is no axe to be ground; no bull to be slung. We merely want you to see for yourselves, so that when you again return to civilian life and your profession of writing, that you will be able to dip your pen in truth before you start writing.

"Our trip is to be divided into three sections: the S. O. S.; the battle-fields, and finally the Army of Occupation. This afternoon we will board our train and tonight we will go back to the coast, to Brest. From there we will go to St. Nazaire, and then to Bordeaux. Thence to St. Pierre-des-Corps, up to Gievres, and then on to Mehun. At each of these points in the S. O. S. (Service of Supply), we will spend one day, be met by the several camp commanders who will escort us through each of the camps, tell us why the camps were built, who built them, how long it took, what they cost, what they would have cost if built on 1914 prices, when they expect to abandon them, what they expect to do with the abandoned material and all other pertinent facts. You will be given blue prints of each camp, and a mimeographed copy of each commander's talk. This data will be yours to do with as you wish.

"After our tour of the S. O. S., we will spend two days at Chaumont, where each of the five generals will give you an hour's talk on the function of his particular division.

"When we have proceeded thus far, we will turn our trip toward the battle-fields, visiting in the order named: Chateau-Thierry, Fismer, Soissons, Toul, St. Mihiel, Commercy, Clermont-on-Argonne, Varennes, Montfaucon, Grandpre, Buzancy, Sedan, Stenay, and Verdun. At each of the three salients we will spend two days; in the Argonne we will spend four. At each of the places named, we will get out of our special train and board motor vehicles in order to permit us to get right out into the fields and see them as they are. While there, some captain, major or colonel, some officer who was there at the time of the fighting and knew what it was all about, will gather you around him and explain exactly what transpired between the Germans, the various divisions of the American army, and when involved, the supporting French or English divisions. In this way, we will re-fight, on the actual grounds, every major battle and do it in about two or three hours. And here also, you will be supplied with topographical maps, charts, blue prints and fully detailed copies of all talks and lectures.

"Finding our train again at Verdun, and after having gone through the French catacombs there, we will proceed up the Moselle River to Coblenz, and spend a couple of days with the American Army of Occupation. We will visit their headquarters in old Fort Ehrenbreitstein (which was built by Ceasar), and learn the purpose, the cost, and the details of our occupation. Having done that, we will leave our train, board a river boat and ride down the Rhine (past the Mouse Tower, the Lorelei, the Cat and Mouse towers, the Seven Mountains, the Krupp Works, etc.) to Cologne, where we will spend further time comparing the English with the American Armies of Occupation.

"After that, we will toddle back to Paris and each of you will be returned to your respective company and regiment.

"We have dining cars, kitchen cars, supply cars, and library cars equipped with typewriters and an abundance of paper, as well as sleepers on the train we will take. During the course of this trip, every one of you will be a guest of the A. E. F., merely a professional writer. Hence, there will be no rank, no saluting, no difference in the meals served. The tiers of three berths in the sleeping cars have been assigned without respect to rank. Perhaps the upper berth will be occupied by a colonel, while the lower one will be filled by a private or corporal. We are doing this because we know that the real generals in this war are not the men with stars on their shoulders but the men with pens in their hands. The duty imposed upon every one of you writers is this: you must tell the truth. It may shame the devil, but you won't shame the American Expeditionary Forces. We have made many mistakes. We have been defeated in battle. We are going to tell you the whole story, let you see it for yourself, then provide you with that data which will permit you to steer your professional efforts by the lamp of truth."

And, sirs, that is the why of the trip I took, beginning thirteen years ago, April 7th.

If you will stop to think about it just a moment, you will realize that this trip on the Newspaperman's Special probably saved innumerable lies and misconceptions and untruths from being printed and foisted upon the credulous public. After the war, everyone wanted to believe the worst. Senators were just itching for something to investigate. Heart-torn mothers and disgruntled soldiers were all looking for something, some one, some incident, some method, to damn. Realizing this, the G. H. Q. executives told the reporters, the writers, the journalists, the unadulterated truth *before* they had time or opportunity to voice misconceptions and misunderstandings.

That trip doubtless saved barrels of printer's ink being spilled in the wrong direction. It saved reputations from needless slaughter; preserved American belief in its principal institution from the corrosion of lies.

A Lesson Drawn from the Story

When I started this article, I had no intention of drawing a lesson from the story. But as you think what value must have been derived from the institution of The Newspapermen's Special, think also of what value *you* might derive from the simple act of laying all the cards on the table for your employees. When some workman is disgruntled over a fancied slight; when a foreman can't see why he must take a cut in wages or doesn't get a raise; when the power plant engineer secretly calls you an old doddard for not installing the new equipment he wants—show them the figures. Let them see, step by step, every operation of your plant—particularly the financial end. The vast majority of men are loyal at heart, so when shown exactly the problems of the executive, they will be quick to perceive and acquiesce to the insurmountable; and be happier, more contented, and more loyal for having that knowledge.

Perhaps by employing the principle of The Newspapermen's Special, you can develop better understanding and engender deeper loyalty among those whose names are on your payroll.

The Paper Industry Safety Contest

July 1 to March 31 (Cumulative)

10 Mills Keep Perfect Score

PERFECT SCORES

Division I—Paper and Pulp Mills

	ENTRANT	MILL	LOCATION
GROUP A			
GROUP B	The Champion Coated Paper Co.	No. 1	Hamilton, Ohio
GROUP C	Pioneer Paper Co.	Los Angeles	California
	Cornell Wood Products Co.	Cornell	Wisconsin
	U. S. Envelope Co.	Morgan Paper Div.	Lititz, Pa.
GROUP D	Continental Paper & Bag Corp.	Ashland	New Hampshire
	Hollingsworth & Whitney Co.	Riley	Maine
	International Paper Co.	Madison	Maine

Division II—Remanufacturing

Oxford Paper Co.	No. 2	Rumford, Maine
Kimberly-Clark Corp.	Atlas	Appleton, Wis.
Bemis Bros. Bag Co.	E. Pepperell	Massachusetts

IMPERFECT SCORES—Division I

	Key	Rank	Points Credit	Points Debit
GROUP A	PA-10	1	960.264	
	PA- 2	2	754.464	
	PA- 3	3	725.392	
	PA-11	4	701.296	
	PA- 7	5	452.720	
	PA- 5	6	423.920	
	PA- 6	7	299.328	
	PA- 1	8	129.792	
	PA-12	9	57.873	
GROUP B	PB-18	2	873.888	
	PB- 9	3	840.064	
	PB- 4	4	837.584	
	PB-23	5	816.928	
	PB-27	6	800.256	
	PB-16	7	788.992	
	PB-14	8	752.112	
	PB-20	9	740.784	
	PB-30	10	709.264	
	PB- 8	11	671.664	
	PB- 1	12	615.104	
	PB-13	13	606.640	
	PB-15	14	576.240	
	PB-19	15	506.944	
	PB- 2	16	419.568	
	PA- 8	17	262.528	
	PB-25	18	173.248	
	PB-21	19	166.496	
	PA- 4	20	160.256	
	PB- 3	21	89.648	
	PB-17	22		80.640
	PB-12	23		88.672
	PC- 8	24		465.952
	PB- 6	25		649.376
	PB- 7	26		736.752

Division II

	RA- 1	4	947.536	
	RC-10	5	784.976	
	RC- 2	6	634.880	
	RD- 1	7	503.152	
	RC- 8	8	374.480	
	RC- 9	9	367.232	
	RD- 3	10	361.152	
	RC- 6	11	291.888	
	RC- 5	12	180.800	
	RB- 1	13	173.328	
	RC- 3	14	146.352	
	RC-11	15		385.616

	Key	Rank	Points Credit	Points Debit
GROUP C	PC-25	4	899.568	
	PC-51	5	891.488	
	PC-34	6	883.424	
	PC- 9	7	771.536	
	PC-10	8	766.336	
	PC-33	9	653.600	
	PC-18	10	585.472	
	PC- 3	11	522.160	
	PC-12	12	496.912	
	PC-44	13	418.096	
	PC-35	14	384.176	
	PC- 1	15	309.904	
	PC-38	16	235.296	
	PC-28	17	218.152	
	PC- 2	18	195.776	
	PC-37	19	178.736	
	PC-23	20	175.312	
	PC-39	21	117.552	
	PC-19	22	68.464	
	PC-11	23	13.360	
	PC- 7	24		163.472
	PC-50	25		184.224
	PC-30	26		256.688
	PC-24	27		279.984
	PC- 4	28		281.008
	PC-52	29		348.816
	PC-36	30		377.952
	PC-56	31		385.600
	PC-17	32		391.808
	PC-53	33		409.872
	PC-42	34		436.176
	PC-31	35		554.432
	PC-57	36		694.592
	PC-58	37		1,292.288
	PC- 6	38		1,302.960
	PC- 5	39		1,467.344
	PC-13	40		1,642.864
	PC-47	41		2,004.704
GROUP D	PC-46	4	339.824	
	PD- 8	5	233.824	
	PD-12	6		117.792
	PD- 2	7		169.904
	PD- 4	8		2,501.936

Total Withdrawals—PA-9; PB-11, 22, 26, 28, 29; PC-14, 15, 22, 26, 29, 41, 49, 54, 55; PD-3, 5, 11; RC-4, 7; RD-2, 4.
No February or March Report: PB-24; PC-45.
No March Report: PB-10; PC-20, 21, 27, 40, 43; PD-9.

◆ Hawaiian Drivers Given Safety Medals

The first safe driving awards ever to be presented by the National Safety Council outside of continental United States were presented to fifteen drivers of the City Transfer Company of Honolulu. An impressive ceremony accompanied the presentation by J. Ancil, president of the company.

Each of the fifteen men honored had driven at least a year without an accident.

◆ Committee on Preservation of Records Plans Further Research

At a recent meeting of the Advisory Committee of the Research Council for the Bureau of Standards Research on Preservation of Records, means of expanding the studies and carrying them on more advantageously were discussed. The National Research Council is administering grants by the Carnegie Corporation totalling so far $30,000, for assistance in the studies dealing particularly with library storage conditions. The other branch of work deals with the permanence properties of record papers and this is assisted by the Brown Company through the services of two research associates.

The information obtained has outlined quite definitely how current papers are likely to react to storage conditions, and what the optimum storage conditions are. The further research contemplated deals with the more difficult problems of finding means of improving the resistance of papers to deterioration, and of increasing the life of impermanent papers bearing important records.

It was unanimously agreed that consolidation of the entire outside support at this time within the National Research Council would be very desirable, and it was recommended that the council endeavor to secure an additional fund of $10,000 annually, for a period of three years, to carry out this plan. Doctor Henry K. Benson, chairman, Division of Chemistry and Chemical Technology, National Research Council, who is also chairman of the advisory committee, stated that his organization would proceed actively with solicitation of funds for the purpose, and would be pleased to have anyone interested communicate with them.

The other members of the advisory committee are as follows: Miss Helen U. Kiely, chief chemist, American Writing Paper Company, Inc., Holyoke, Mass.; H. M. Lydenberg, assistant director, New York Public Library, New York, N. Y.; Doctor H. G. Knight, chief, Bureau of Chemistry and Soils, Department of Agriculture, Washington, D. C.; W. D. Harper, president, W. D. Harper, Inc., New York, N. Y.; B. L. Wehmhoff, technical director, Government Printing Office, Washington, D. C.; R. E. Flynn, Union Guardian Trust Company, Detroit, Mich., chairman, Paper Standardization Committee of National Association of Purchasing Agents; A. M. Chase, Dodd Mead & Co., New York, N. Y., representing National Association of Book Publishers; M. Krimmel, Hammermill Paper Company, Erie, Pa.; G. A. Richter, Director of Paper Research, Brown Company, Berlin, N. H.

◆ THE NATIONAL SAFETY COUNCIL states there are few cases on record of autos being struck by lightning, and issues a warning to drivers who feel impelled to leave their cars and seek shelter from the storm, to stay in the car. Persons driving within a conducting enclosure are fairly safe against this hazard, as automobile tires are excellent protection from lightning despite the fact that there is water all about.

◆ Elliott Announces Change in Format of Publication

The Elliott Service Company, Inc., New York City, announces a change in the format of its bulletin, *Management*. This publication was formerly issued every two weeks as a 12-page book and a small 4-page leaflet every two weeks. Under the new plan, a 4-page bulletin, 8½x11, will be issued every week. The bulletin is punched for easy filing in loose leaf binder.

For the information of those unfamiliar with *Management*, this is an information service for department heads, supervisors and foremen. The vocational training courses and bulletins to aid in accident prevention contributed by this well-known management service, have been used by many of the paper mills with excellent results.

The schedule announcing leading articles to appear in the first ten issues of the new *Management*, has been arranged to conform to preferences stated in a recent questionnaire filled out by Elliott subscribers. There are three articles on cost reduction, three on quality, two on waste and two on safety.

The new price of *Management* is only ten cents per copy, which will be attractive to industrial plants and enable many subscribers to place the bulletin in the hands of all of their supervisory force.

A Pioneer Woman Executive

Miss Callie Nason holds record of having been the first and only woman manager of a pulp and paper mill in Wisconsin.

By TOM TAYLOR

THE business world has few women executives in comparison with the vast number of such positions filled by men. But when women do take to a business career, they are often an outstanding success. In such a class is Miss Callie Nason, who for nineteen years was in complete management of the Centralia Pulp & Water Power Company, located at what was then known as Centralia, Wisconsin, later renamed Wisconsin Rapids.

Miss Nason holds the title of the only woman manager of a pulp and paper mill company in Wisconsin, and a survey might reveal that this holds true of other states. But her wreath of laurels is complete and needs no empty ornaments to enhance it.

This young woman's entrance into business was just one of those cases of chance or accident that offers no explanation of how or why it happened.

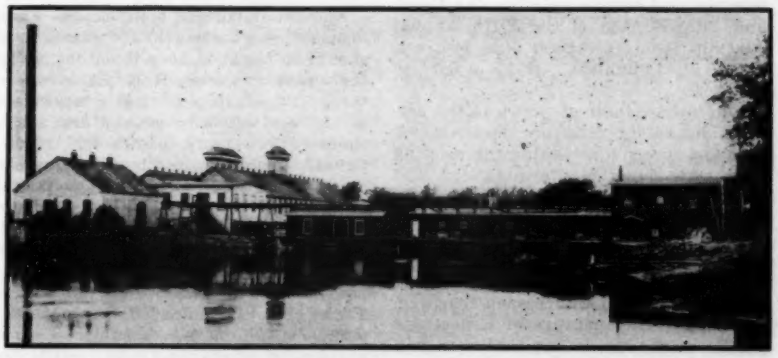
Miss Nason's father and uncle came together from Standish, Cumberland County, Maine, in the year 1854, and settled on adjoining farms in the northern part of Wood County, Wisconsin. Her parents were of the sturdy pioneer type that forms the backbone and foundation of every substantial community. There were four younger children, all boys.

Her childhood days were spent on the farm where she was born, in one of the most fertile sections of Wisconsin, heavily timbered with pine and beautiful maple and other hardwoods. In the fall, Nature painted the leaves of these trees a riot of color; in the spring, the same magic hand laid a carpet of the most beautiful wild flowers, trilliums, spring beauties, lupin and others, leaving an imprint of lasting memories and developing an unusual imagination.

Miss Nason's father was of French descent, of that strong build that in spite of the hard toil of pioneer days, he lived to be ninety-two years of age, and her mother died at the fine age of 77. So her inheritance points to longevity as well.

As a child, she spent much time at the home of her Uncle Sol, whose farm adjoined that of her father. She was always thrilled with the stories that he told her of his trip from Maine to California; how he left his home in the spring of 1849 and sailed around Cape Horn when it took six and one-half months to make the voyage. His stories of gold mining and the Spanish Missions were no end of enjoyment to her, and implanted a deep-seated desire to retrace his steps. Later in life, she had the supreme pleasure of satisfying that desire—dreams that are often outgrown, or seldom realized.

Perhaps her first adventure was the two-mile walk to the country school. Her youth was spent amid such surroundings that contributed to the building of a wonderful constitution, and though she grew tall, she developed a grace of bearing that comes to those who have walked much out of doors, and she came into young womanhood a comely girl.



View of Centralia Pulp & Water Power Company in Year 1895

At an early age, Callie proved herself an unusual student. She finished high school at Marshfield, Wisconsin, as an honor student. As she was the only girl in the family, and was not needed on the farm, she determined to follow her desire to enter commercial work.

The Centralia Pulp & Water Power Company had just completed its pulp mill at what was then known as South Side, a part of Centralia, which was later joined to Grand Rapids and later renamed Wisconsin Rapids. Through a friend, Miss Nason was induced to apply for the position of bookkeeper, wrote to Mr. G. F. Steele, the manager, and in due time was accepted. Thus began, in the fall of 1888, her association with this paper company of which she was later to become a prominent stockholder and manager.

Mr. Steele left the next year for other fields and Mr. Frank Garrison became manager and president.

In 1891, the company decided to build a paper mill of two machines. This was the first paper mill to be built on the Wisconsin River. The water in this river is highly colored by reason of vegetable matter and some thought it unfit for paper making. But the backers of this company held a firm belief that the water could be made usable and their success proved their judgment.

The ruling characteristic of Miss Nason to master every subject with which she came in contact, sent her to studying every phase of the business about her. She soon advanced to complete charge of the office and many of the minor details about the mills. The selling was done by Mr. Garrison so that he was taken away from the active contact with the office and mills more and more and greater reliance was placed on Miss Nason. Her development was most gradual and thorough and on the death of Mr. Garrison, in 1905, she was placed in complete charge and became the manager in fact of the pulp and paper mill for her company.

Judicious care of her earnings had made her a substantial stockholder in the company and she was placed in a very favorable way to acquire more stock. This she quickly accepted and greatly benefited thereby. Her splendid management enriched her benefactors and herself.

Her early remembrance of the woods always clung to her, and as the plant was located down river about two miles from town, she often preferred to walk home in the evening, the better to enjoy the pleasure of the strip of woods through which she strolled. This, in the season, was profusely covered with beautiful trilliums, like in her own maple woods of girlhood days.

As manager, her genial disposition attracted all to her, yet that peculiar grace of bearing kept them all in their proper places. She handled the one hundred men in her employ with ease and built up a devoted personnel, from the lowest paid to the highest salaried man that inspired each to repay her in faithful service, so rare in mill operations. Her judgment was deliberate and her decisions unhurried.

In 1912, the fine two-machine paper

mill burned so completely that nothing of value remained. Miss Nason handled the adjustment herself and obtained a settlement that was agreeable to all concerned. The pulp mill continued to operate but the close application for so many years began to tell on Miss Nason and she suffered a breakdown in 1920 that sent her to the hospital for treatment and observation. Under their care and assisted by that of her devoted companion, Miss Pauline Brahmstead, she made rapid recovery and was again permitted to return to her post of duty.

Her whole soul was wrapped up in that mill and no other attachments were ever allowed to come into her life. She operated the pulp mill for several years when it was decided that they must either tear it down or rebuild entirely. It was finally torn down and replaced by an up-to-date hydroelectric plant. Miss Nason had the pleasure of closing the chapter of her devotion to the paper mill industry and to this mill in particular and start it into a new field.

In 1924, the new plant was operating perfectly and Miss Nason decided that she had earned her release and resigned. Some time previously, she had built a very fine home in Wisconsin Rapids along the bank of the river she had learned to love, and where she and her companion have enjoyed many pleasant days.

In the fulfillment of one of those childish dreams that is so rare, she spent many winters in California retracing her uncle's steps into the many places and through the beautiful Spanish Missions.

The portrait of Miss Nason shown here was taken when she was active manager of the plant, yet time has dealt kindly with her and she is still a fine looking woman with that stately grace of movement that has always been one of her many charms.

Fifth Annual All-Ohio Safety Congress

Attendance and interest in educational program of Pulp and Paper Section exceeds that of normal years.

WITH registration practically as large as last year, despite the business depression, and with more interest shown in the phases of education of foremen and employees alike, the Paper and Pulp Section of the Fifth Annual All-Ohio Safety Congress held two sessions at Columbus, Ohio, April 19 and 20.

The intense interest shown in the program by safety directors, superintendents and foremen attending the meeting from Ohio paper plants, indicated that the matter of safety is being taken more seriously than ever before. It was declared repeatedly that during times of depression, safety work should progress more rapidly as men are in a better frame of mind to absorb such teaching.

Owing to the inability of Ernest Augustus of the Mead Corporation to preside, D. C. Hunter, director of personnel and safety of the Oxford Miami Paper Company, West Carrollton, Ohio, acted as chairman. Roy J. Murbach, safety engineer of the Gardner-Harvey Co., Middletown, Ohio, was secretary.

Safety in Handling Chemicals

E. C. Rogers, safety director of the Grasselli Chemical Co., Cleveland, discussed the subject "The Safe Handling and Use of Chemicals in the Paper Industry." Mr. Rogers outlined a complete set of rules for the handling of chemicals, principally sulphuric acid, muriatic acid and soda ash. He declared that the handling of sulphuric acid in both carboys and drums should be attended with the greatest care. Carboys should not be lifted by the necks and in storage they should be placed in such a manner that spilling is prevented. In pouring from carboys, goggles, and in many cases a safety board, should be used to keep the spilled fluid from burning the worker.

Another important point is that when drums of sulphuric acid are stored, care should be taken to keep them out of the sun's rays and away from places where there is more than normal temperature as the acid tends to expand and sometimes disastrous explosions result. Drums should be aired by releasing the tap or bung and these openings should be watched that they do not sulphate and fill the vent hole. In storing sulphuric acid in tanks, they should be vented in such a manner that the expansion due to heat is not dangerous. Tank cars, if unloaded by pressure pumps should never be subjected to a pressure of more than thirty pounds per square inch.

Muriatic acid, while not so dangerous, often causes slight injuries if handled carelessly. Rubber gloves, aprons, rubber shoes and goggles should be used by all workers in handling chemicals.

Community and Industrial Safety

Frank W. Rodenhaeber, manager of the Louisville Safety Council, spoke at length on "The Influence of a Community Safety Program on Industrial Safety." Since the Louisville Safety Council is recognized as the leading community safety organization in the country, Mr. Rodenhaeber's statements carried considerable weight. He showed the reduction of lost time accidents among the plants in the Louisville industrial district in the past four years, due to the intensive work carried on by the Council. In 1928 with 10,756 employees, there were 1,141 accidents resulting in 30,477 lost days, compared with 957 accidents, 12,580 employees and 21,357 lost days in 1929; 595 accidents, 11,809 employees and 15,737 lost days in 1930 and 327 accidents, 11,045 employees and 7,927 lost days in 1931.

An informal discussion of the question as to whether plant managers should continue safety work under the same plan as in former years showed that a large majority of the paper and pulp mill executives recognized its worth and have made provisions for continuance.

The safety manager of one concern reported that when the president was asked concerning attendance at the congress, he was told to take a larger number of men than in former years. Foremen who have departments where hazards are particularly great, were taken to the meeting in larger numbers than in previous years.

The Accident Prone Employee

At the second day's session, Dr. F. G. Barr, director of industrial relations of the National Cash Register Co., Dayton, spoke on "The Accident Prone Employee." The speaker declared that after studying the question at length he wonders if there are as many accident prone employees as is generally supposed. He placed the blame partially upon the foreman, the executive and other contributing factors. He said that the accident prone employee as that term is generally accepted is in many cases, not the greatest hazard by any means.

He cited an instance of a National Cash Register employee whose card showed that he had visited the medical department possibly fifty times in twenty years, although this man had never lost an hour's time in the plant and was one of the best workmen. His trouble was a simple though peculiar one—that of foreign bodies in the left eye. An analysis showed that the workman did not have the usual reflex action in that eye to protect the member.

The speaker told of experimenting with the plant's 8,000 employees several years ago by weighing all of the men. About 10 per cent, or 800, were found to be 20 lb. or more under weight. These men were given a course of drinking malted milk and their physical condition watched. In six months, 72 per cent responded to the treatment, some going as much as 20 pounds over weight. This showed, he declared, that the man's physical condition is by far the worst hazard in industrial plants. He closed by saying that in these trying days the management should be careful in discharging employees who are believed to be accident prone, and that a more kindly attitude should be taken in many cases.

A discussion as to the methods of retiring superannuated employees, where the company has no pension system, was outstanding. These employees in many cases become a hazard to themselves and fellow employees. One plan was to give the man one per cent per month of his actual earnings during the five years previous, to which is arbitrarily added ten dollars. This plan gave the em-

ployees so retired, from $33 to $47 per month as a pension. Another plan was to give the employee one-half year's wages and let him go.

Handling and Storing Materials Safely

One of the important and interesting papers was that of Harry M. Hiers, safety director of the Ohio Boxboard Co., Rittman, Ohio, on "Safe Handling and Storage of Materials." The speaker declared that since handling of objects is at the head of the list of lost time accidents in every classification made, the greatest care should be taken by foremen and others in authority to instruct the workmen. "Teach the men to work with the idea of safety," he said. Foremen must maintain discipline in every way and the foreman who fails to see that rules are carried out, in turn should be disciplined. Sometimes a change in the methods of handling or hauling should be instituted to bring about greatest safety.

Mr. Hiers declared that many of the accidents at his plant have resulted in unloading cars of waste paper since the unloading platform is generally too high for the bottom of the car. This will be remedied. Since the company loads by electric truck, the change will make for safety, he declared. The speaker also insisted that every effort should be made to prevent workmen from using their heels to block cars, as many accidents occur in that way. He also cautioned safety directors and foremen to see that chains and grab hooks on cranes used for loading and unloading be inspected frequently. The electrical equipment in the cranes should be inspected every 24 hours, he said.

New Officers

The nominating committee, Earl Grant, Crystal Tissue Co., Middletown, chairman, placed in nomination Warren Rupp, manager of personnel of the Gardner-Harvey Co., for chairman, and Ernest Augustus, safety director of Mead Corporation, for secretary. These officers were unanimously elected.

Pacific Coast T. A. P. P. I. Holds Two-Day Session

Prominent technical men address large delegation. Open forum special feature of Portland meeting.

THE Pacific Coast Section of national T. A. P. P. I. held its regular semi-annual convention at the Multnomah Hotel, Portland, May 6 and 7, adopting the policy of holding a two-day session rather than one day, for the first time since the Pacific section was organized in 1928. About 90 delegates were in attendance.

Ralph B. Hansen, technical director of the Weyerhaeuser Timber Co., pulp division, Longview, was chairman. Other officers are: vice-chairman, I. Harry Andrews, chief chemist of the Powell River Co., Ltd., Powell River, B. C.; vice-chairman, James P. V. Fagan, superintendent of the Puget Sound Pulp & Timber Co., Everett; vice-chairman, Ray J. Schadt, technical superintendent, Hawley Pulp & Paper Co.; and secretary and treasurer, E. G. Drew, of the J. C. Ross Engineering Corp., Portland. Ray Smythe, general manager of the Willamette Iron & Steel Works, Portland, was general convention chairman.

Subjects Presented

The nineteen subjects touched on during the meeting included everything from Convention Etiquette and the Goal of T. A. P. P. I., delivered by Benjamin T. Larrabee, member of the National Executive Committee and superintendent of the Weyerhaeuser Timber Co., pulp division, to the Pessivating Effect of Sulphite Liquor on Stainless Steels, in which H. H. Richmond, research engineer of the Electric Steel Foundry Co. of Portland, pointed out that chromium was the fundamental outlying quantity in combatting corrosion.

Concentration of Waste Sulphite Liquor by Submerged Combustion, delivered by Dr. Kenneth A. Kobe of the University of Washington, was a descriptive and detailed talk on this experiment now under study at the school and which has the advantage of eliminating scale forming difficulties and minimizing corrosion and foaming. It should prove important for heating chemical solutions because the temperature is at a low point and all heat is in the solution, the heat transfer being direct and complete in a short time, he stated.

W. N. Kelly, assistant superintendent of the pulp division, Weyerhaeuser Timber Co., outlined Process Improvements and Controls in Sulphite Cooking Practice, emphasizing the four chrome-nickel steels now available in sheets, tubes, rods and castings; the use of hot acid in place of cold and the use of gauge sight glasses for controlling the liquor. Ralph B. Hansen, technical director of the pulp division of the Weyerhaeuser plant, spoke on The Chlorination of Wood Pulp, stating that not only is the chlorination method easier to handle and a saving of 20 per cent to 30 per cent, but it gives the uniformity which is essential in bleaching, because the system is continuous, rather than a recirculation method.

Among the other comprehensive talks on technical and managerial problems of the pulp and paper industry were: Kraft Mill Problems by R. S. Wertheimer, resident manager, Longview Fibre Co.; Pulp Wood and Woodroom Operation in Pacific Coast Mills by E. A. Weber, sulphite superintendent, Oregon Pulp & Paper Co.; Importing and Exporting Problems by Ralph H. Shaffer of the Shaffer Box Co.; the Importance of Technical Control in the Groundwood Plant by R. J. Schadt, technical superintendent of Hawley Pulp & Paper Co., and Suction Presses and Extractor Rolls by J. J. Farrell, sales engineer of the Downingtown Mfg. Co.

Blistered Boiler Tubes was the subject selected by Thomas N. Parks, chief engineer of the Hawley Pulp & Paper Co., who explained that this difficulty has been controlled somewhat of late by requesting the distributors of the fuel oil to keep the sulphur content in the fuel oil down to a minimum. It was found in this plant that clean tubes corrode and blister more quickly than if heavily scaled, because of the direct contact of water to the iron which draws intense heat from it constantly.

Arthur C. Zimmerman, general manager of the Pacific Straw Paper & Board Co., talked on Developing New Uses for Pulp and Paper, listing the fruit and vegetable containers, a recent development of the plant as important and the produce field a broad one in which to work on new papers. I. H. Andrews, chief chemist of the Powell River Co., Ltd., explained Corrosion in a Pacific Coast Groundwood Mill System; W. L. Beuschlein, professor of chemical engineering at the University of Washington, spoke on New Uses for Cellulose.

Ralph H. Mort, of the Metropolitan Printing Co., Portland, in Telling the Paper Manufacturer, listed watermarks that are too deep and necessitate unusual pressure on the type with consequent faster wear than necessary, curled corners, difference in two sides of a sheet of book paper which require different amounts of ink, static and slow drying caused in some cases by the acids in the paper as the most important difficulties he meets.

A. D. Wood, superintendent of the Shaffer Box Co., offered instructive and humorous advice on Co-ordination Problems from the Viewpoint of the Superintendent. Drying Systems in Sulphite Pulp Mills by J. P. V. Fagan, superintendent of the Puget Sound Pulp & Timber Co., completed the program.

Open Forum Brings Out Valuable Discussions

A feature inaugurated this spring was the Question Box and Open Forum lasting two hours at the end of the second day's program. At this time, any subject of interest not covered in the regular program and any questions of members were offered for discussion.

The Question Box queries were collected earlier in the year, the most important of which through vote of the individual members of T. A. P. P. I. when the questions were submitted them by letter were chosen for the subjects on the main program. Each member submitted one question with his answers to the series.

Among questions discussed were: *What is the most reliable stainless steel?* the decision being that temperature and use to which it is to be put make it advisable to depend on no certain formula

in general, but to consult a reputable manufacturer for one's particular problem.

What effect has calcium chloride on pulp and paper? It lowers quality, causes yellowing, loss of color and difficulty in sizing, it was generally decided.

What concentration of calcium chloride shows good washing? Answers varied from less than 16 to less than 25 parts per million.

What allowance should be made in pulp strength in the fact that the sheet is tested in bone dry condition? The ratio of drying depends on dehydration, was the accepted theory, although there was some contention against testing bone dry.

How much free lime should be left in waste liquor? Not over 1 gram which is saturation, was accepted as the limit with 5/10ths, 7/10ths and 8/10ths grams to the litre offered as definite amounts used.

Members Enjoy Social Events

Entertainment during the convention was under the auspices of the Portland Peddlers with a golf tournament Friday afternoon at the Oswego Lake Country Club. A luncheon with Dr. George Kim Lee, speaker, offering his country's side of the Sino-Japanese Controversy and a banquet Friday evening for members of T. A. P. P. I. and their ladies formed pleasant diversions. The concluding evening was given over to an informal stag banquet with the Peddlers as hosts.

Penna.-New Jersey Supers Spring Meeting

Gathering at Reading, Pa. hears interesting papers and addresses

THE Pennsylvania-New Jersey Division of the American Pulp and Paper Mill Superintendents' Association held its spring meeting at the Hotel Abraham Lincoln in Reading, Pa., on Saturday, April 16, under the chairmanship of Charles H. Kephart, superintendent of the International Paper Company's mill at York Haven, Pa. Among the superintendents registered, in addition to the chairman, were: C. S. Wentz, P. H. Glatfelter Paper Co., Spring Grove, Pa.; Frederick H. Fielding, Diamond Mills Paper Co., Bloomfield, N. J.; Oscar Stametz and George L. Bidwell, Riegel Paper Corp., Riegelsville, N. J.; J. Linville Mullin, Jessup & Moore Paper Co., Wilmington, Del.; S. M. Hesser, Hinde & Dauch Paper Co., Gloucester, N. J.; M. Craig Maxwell, McDowell Paper Mills, Manayunk, Philadelphia; Raymond E. Stearns, Container Corporation of America, Philadelphia; Robert Knowles, Curtis & Bros. Co., Mount Holly Springs, Pa.; Harry C. Busser, International Paper Co., York Haven, Pa.; E. C. Gildenzopf, Schmidt & Auldt Paper Co., York, Pa.; John C. Harper, Jr., West Jersey Paper Manufacturing Co., Camden, N. J., and some twenty-five other members and guests, including Charles L. Ellis, Downingtown Manufacturing Co., Downingtown, Pa.; L. M. Booth, Booth Chemical Co., Elizabeth, N. J.; Roger G. Edwards, Cheney-Bigelow Wire Manufacturing Co., Springfield, Mass.; George A. Zeiss, Manhattan Rubber Co., Philadelphia, and Carl Schmidt, E. I. du Pont de Nemours & Co., Inc., Philadelphia.

Two sittings were held, in the morning and afternoon, and there was a banquet in the evening. Among the speakers on the morning program were: C. H. R. Johnson, sales engineer for the Downingtown Manufacturing Co., who spoke on "Downingtown Extractor for Cylinder Machines;" R. M. Watts, Cheney-Bigelow Wire Co., Springfield, Mass., "Dandy Rolls and Wires;" John Lundrigan, industrial superintendent, International Paper Co., "Safety First as Applied to Paper Mills."

Welcomed by the Mayor of Reading

The proceedings were opened with an address of welcome by Mayor Heber Ermentrout, who told the visitors many interesting facts about Reading and described what the city was doing to aid the unemployed, referring in particular to a boulevard project on Mt. Penn.

The Downingtown Extractor

The first paper was an illustrated demonstration of the Downingtown extractor roll for cylinder machines by C. H. R. Johnson, of the Downingtown Manufacturing Company, who answered numerous questions concerning the operation of the extractor roll, while Mr. Ellis exhibited a number of different samples of paper and board made on cylinder machines equipped with the Downingtown extractor.

Dandy Rolls and Wires

The paper on dandy rolls and wires by R. M. Watts was read in his absence by Roger G. Edwards, second vice president of the Cheney-Bigelow Wire Works, who explained the advantage of the Zig Zag wire. In this method of manufacturing wires the cloth is woven in such a way that the individual warp wires move first to one side and then the other, a total of about three-eighths of an inch, which eliminates any tendency to scoring.

A Pamphlet for Wire Users

Mr. Edwards advised everyone present to send ten cents to the Superintendent of Documents, Washington, D. C., and obtain a copy of the pamphlet entitled "Commercial Standard CS 36-31, Fourdrinier Wire Cloth," which gives the specifications of meshes and sizes of wire used by the principal manufacturers. The pamphlet describes methods for obtaining maximum service from wires, details being given of the best means of storage, packing and installation, as well as the cleaning of wires and the proper tension and suction to be applied. The pamphlet also contains a glossary of terms used by manufacturers, which he said would be of assistance in understanding some of the letters which they are occasionally called upon to write.

Accomplishments in Accident Prevention

John Lundrigan, industrial superintendent, International Paper Company, could not attend the meeting, his duties having called him to one of the mills in Canada. His contribution to the technical program took the form of a paper entitled "Practical Experience in Accident Prevention," which was read for him by John Cornell.

After giving a definition of practical prevention and care of accidental injury in industry, which he said must go beyond the posting of printed matter on bulletin boards or the distribution of booklets, he gave an account of the system followed by the International Paper Company for securing the safety and promoting the health of employees. The success of the system was demonstrated by a comparative table giving the number of full time employees listed in the years 1917 and 1931 and the accidents reported for both years. In the fourteen-year interval between 1917 and 1931 the number of full-time employees had increased from 6,631 to 8,210, a growth of 1,579. The lost-time accidents reported for 1917 numbered 1,399 and for 1931, 307, a decrease amounting to 1,092. Fatal accidents in 1917 numbered 12, whereas in 1931 only one fatal accident was reported. The significant showing was in lost time from accidents. This in 1917 totalled 18,194 days, and in 1931, 6,703 days, or a decrease of 11,491.

Mr. Lundrigan gave details of the methods used to get the co-operation of employees; the support of owners and executives was already assured. From the start, said he, they were behind every effort to improve existing conditions.

The plants of the International Paper Company are scattered over 2,000 miles of territory, making it necessary to draw up a system of safety organization rules which could be applied universally. This system was the creation of the employees and local managers who either proposed or approved the various features of it. It makes the plant manager responsible for the application of safety measures as a part of his manufacturing operation. Then there is a local supervisor of safety and sanitation who gives special attention to the study of accident causes and their prevention.

There is an exchange of information relating to serious or unusual types of accidents at any of the plants so that each may benefit from the experience

of the others. The cost of industrial accidents has been added to manufacturing cost reports and this, Mr. Lundrigan said, exerted influence upon accident prevention.

The relation of the incidence of accident to health was said to be of great importance. A system of physical examination of prospective employees has proved valuable in accident prevention. The big thing, however, in assuring the observance of safety rules was personal contact plus leadership, instruction, advice and encouragement to the men on the job, by the department superintendent, foreman, gang boss or whatever he may be called. This important man is provided with the latest information on accident prevention and is given every assistance and encouragement in its application. A necessity in the work of preventing accidents was the use of the Safe Practice pamphlets sent out by the National Safety Council. These pamphlets supplied information in non-technical language based on practical knowledge and experience and described and illustrated separate hazards, affording the best reference data for everyday use by the man on the job.

Mr. Lundrigan is a strong advocate of beginning safety education in the school so that children may be taught the rudiments of safe practices and hygiene in order to insure the right influence in their adult life. The International Paper Company co-operates with local school authorities by providing material for study as well as the attendance of members of the company's safety and nursing system to elucidate problems.

At the afternoon sitting, W. E. Brown, sales manager of the American Wringer Company, read a paper on "Rubber Rolls" and answered a number of questions. The remainder of the afternoon session was devoted to Questions and Answers, the discussion being conducted by Former President James G. Ramsey.

The Need for Courage

The Rev. Dr. Charles E. Roth, pastor of St. Andrews Reformed Church, and past national president of the Reciprocity Club, was the speaker at the banquet in the evening, Mr. Ramsey acting as toastmaster, while V. K. Sanderson was song leader. Doctor Roth's subject was "Current Events." In the course of an interesting address he spoke of the need of a courageous attitude in the present depressed condition of business. It was possible, he said, to choose either the fear-inspiring or confidence-building features of the current of events as it flows by from day to day.

Superintendents Meet at Syracuse

Well-known speakers address Northern New York Division on interesting paper mill topics.

THE annual spring meeting of the Northern New York Division of the American Pulp and Paper Mills Superintendents Association was held at the Hotel Syracuse, Syracuse, Saturday, April 23. Frank A. Johnson acted as chairman of the business sessions which were held both in the morning and afternoon.

The morning meeting was opened by a general round table discussion of mill problems. Paper curl received considerable discussion and varying opinions were presented as to the probable cause, although in general it was felt that the drying operation in one way or another was chiefly responsible. Improper beating may also cause this difficulty. In discussing two-sidedness in a groundwood sheet, it was suggested that this trouble might be eliminated through the use of direct dyestuffs.

Slack edges often occur in the process of manufacturing board and it was suggested by one superintendent that this is mainly due to poor machine ventilation. In answer to the question "Why does cockling occur in the manufacture of heavy board," it was suggested that lower temperatures on the wet end dryers would largely overcome this trouble. Since cockling is caused by too rapid drying, it is well not to overdry the sheet at the very beginning.

The question of proper sizing for body stock of coated papers brought out the fact that the quantity of size added was dependent upon nature of the sheet being manufactured.

Better Ground Wood and Its Manufacture

Following the general discussion, C. L. Bachman, Watertown, N. Y., presented a paper on "Making Better Ground Wood," in which he discussed the various factors entering in the manufacture of ground wood pulp.

A paper read by C. D. Delhers of the Taylor Instrument Co., Rochester, N. Y., on the subject "New Developments in the Manufacture of Ground Wood" opened the afternoon session. The speaker emphasized the need of proper temperature control during grinding and described the experiences of Tycos Engineers in the development of a proper grinder temperature regulator. This included the selection of a proper location for the bulb, its type and design.

Stock produced by grinders equipped with this new control device was noticeably free of fiber bundles as well as flour and fine pulp. Stone life is noticeably longer and the burning operation more infrequent when the temperature is thus closely controlled. Uniform grinding conditions, likewise lead to greater stone production. Temperatures may be controlled within the limits of 1 deg. Fahr. variation of any predetermined temperature. Ease of control makes it possible to gradually bring the grinder up to operating temperature thus lessening the possibility of stone damage.

The manufacture of rubber covered rolls was explained by Mr. E. Peterson of the B. F. Goodrich Rubber Company who illustrated his talk with slides showing the various steps involved in this process. The vulcanizing, grinding and finishing of such rolls was likewise covered by the speaker.

Forty Years As a Papermaker

The chairman introduced as the next speaker Dr. J. E. Campbell of the Dexter Sulphite Pulp and Paper Co., Dexter, N. Y. The speaker chose to reminisce with respect to his forty years experience in the manufacture of pulp and paper, the result being an exceedingly interesting and instructive address.

Dr. Campbell stated that in the early stages of development, sulphite acid was prepared in wooden type towers and wood was cross cut into one and one-half inch blocks. When a wood shortage occurred, it was not uncommon to use six by sixes as a source of raw material. Straw paper for wrapping purposes was considered, fifty years ago, as being supreme from the standpoint of quality and appeared on the market in quire quantities securely tied with ribbons. This was gradually superseded by manila paper which demanded a high price. Competition with its resultant reduction in price and quality soon caused this grade to be succeeded by dry finished papers. Again, quality was gradually reduced resulting finally in the introduction of kraft. This grade appears to be suffering similar reductions in quality as did its predecessors until now it is no better in this respect than dry finished papers. The speaker concluded that these changes were the result of a repetition of the same economic cycle in each instance, brought about as a result of lack of foresight in recognizing the overbalance between demand and production.

Economic conditions of to-day have resulted in a buyers market thus necessitating improvements by the manufacturer in methods of control and operation. Such a condition will continue to prevail until some type of control between supply and demand is recognized. Demand may be increased through an increase in population but no assistance from this source may be expected in the present instance. Legislation offers another means of shortening the gap between potential supply and demand. In this respect, a five-day week would act as a support to this unhappy situation.

Dr. Campbell emphasized his belief in the stability and permanence of the paper industry since it cannot be classified other than as a basic one. As a basis of analogy, the speaker classified all mills into two groups, namely, textile and silk. The former class contains the

fast machines working on news, kraft and the like, whereas the latter group comprises the specialty mills which are in general slow producers of high quality paper. The products of the latter group will always find a market for themselves since they cannot be manufactured by the big mills which utilize the larger and faster machines.

Important Mill Topics

Some sound philosophy applicable to every day life was given by Joseph H. Wallace of the Black Clawson Co. who selected as the title of his talk "Paper Mill Topics." The speaker urged that in order to be happy a certain amount of constructive meditation must be indulged in by each of us. Happiness appears to be the prime requisite in life and the average happy man may be defined as one who has intelligence enough to get what he wants and lives in a community which will give him what he wants. Happiness can only be realized by the individual who gives up a certain amount of his time to the practice of some hobby regardless of type or nature. Such hobbies act as recreation and usually give rise to new thoughts and ideas which have a direct application to one's business or occupation.

Mr. Wallace supplemented his talk with lantern slides which showed various interesting developments in the industry encountered by the speaker in his travels during the past year. These slides included several views of a shake head by means of which shake is applied over the entire wire area instead of confining it to the breast roll alone. An unusual type of vat construction was next shown, differing mainly in the path taken by the stock as it enters the vat which is in the direction of travel of the mold. The curvature of the vat is variable and may be changed to suit operating conditions. Several slides showing hydraulic lifts for both top and bottom press rolls were next shown. Uniformity of drying through elimination of vapor pockets, elimination of dryer felts, saving in floor-space, elimination of slack and draw were set forth as advantages for the use of vertical dryers shown in another series of photographs. Operating pictures of a new type dryer drive, calender reverse gear, new type Miami jordan and a unique apparatus for controlling consistency were also shown.

A new piece of equipment known as a Centrap brought forth many inquiries when shown on the screen. It functions to open up fiber bundles and remove dirt, these operations being accomplished through the use of three copper baskets having perforated rims and set one within another. The baskets are caused to rotate at high speed during which time stock is fed to the inner, the dirt being removed by baffles and the pulp finally discharged to the next basket. A capacity of 1500 lb. per hour is claimed with a resultant fiber loss of only 18-25 lb. of pulp.

Mr. Wallace briefly discussed vacuum drying and its consequent saving of steam amounting to approximately two-thirds that originally required by the open type. Experiments on sizing produced by dissolving the size in a suitable solvent and applying it to the sheet after drying were explained.

The Consulting Engineer and Economy

The chairman then introduced F. C. Farnsworth, of the Farnsworth Company, Watertown, N. Y., who spoke on the subject of "The Relation of the Consulting Engineer to Steam Plant Economies." The speaker emphasized the fact that science and research are at present upsetting industry overnight, thus making it imperative that all mills be kept up-to-date in order to withstand the strain. Any new process or piece of equipment which will pay for itself within a period of several months should be considered by the mill as a good investment from the financial standpoint if such equipment results in an increase in the efficiency of the manufacturing operation. According to Mr. Farnsworth the steam plant offers a potential source of cutting cost within reason.

In order to properly judge in the selection of a piece of equipment the executive must have information regarding the service to be rendered by the machine in question as well as facts and figures pertaining to the investment involved. He should also inquire as to fitness of the design with relation to use. The consulting engineer, in most cases a specialist in his field, is well qualified from the standpoint of experience to render invaluable assistance to the executive in the proper choice and selection of such equipment. An ultimate saving of money usually results when such advice is sought. Too often the advice of an unqualified employee is sought with a subsequent money loss in the end.

The power plant in our present day mills is in reality a highly specialized business in itself. The initial as well as the operating cost is found generally to be very high. Due to the large capital investment involved, the mill should only seek the advice of experts in the field of steam engineering when problems of operation or improvements arise.

Mr. Farnsworth concluded by stating that all operations are being performed today in one-half the time formerly demanded, although in spite of this mills are attempting to run 100 per cent of the time. The result is saturation in all fields of industrial activity. As a means of correcting this difficulty, it was suggested that operating schedules must be cut to three, four or five days each week.

The afternoon meeting adjourned following announcement of the National Convention at Buffalo, June 2, 3 and 4.

Sisson Delivers Address at Banquet

An enjoyable banquet was given in the evening at the Hotel Syracuse and was presided over by Frederick J. Rooney of the Upson Company, Lockport, N. Y., who acted in the capacity of toastmaster. Vocal entertainment was furnished during the course of the dinner, following which the officers of the local section were introduced.

Mr. Rooney then in a few brief words urged all members to plan for their attendance at the National Convention at Buffalo in June.

George Sisson, Jr., President of the Racquette River Paper Company, Potsdam, N. Y., was then introduced as the principal speaker of the evening. It was the speaker's feeling that the paper industry would continue to be a dignified one since its basic problems are also national ones. Mr. Sisson stated that our present economic mechanism is being put to a severe test today and is in dire need of adjustment to meet present day conditions. Such a condition has been largely brought on by over indulgence in the expansion of industrial plants and equipment, aided by installment selling. In all branches of personal and governmental business there is ample evidence of over speculation.

The cure for such a situation has been said to be hard work and sweat but Mr. Sisson was of the opinion that it can come only by retrenchment and readjustment. Such a program is slowly evolving itself in certain industries particularly in the smaller plants, although there still seems to be over indulgence in certain governmental expenditures.

We need courage, stated the speaker, to apply more social engineering to our economic system. Everyone dabbles in this science but more attention should be paid to it in the future in order that we may adjust ourselves to modern lines of thought. The future will also require constructive and courageous leadership in all lines, political, social and economic. Industry consciousness is needed if industry is to continue to be dignified.

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◆ Guyon Miller

Guyon Miller, president of Downingtown Manufacturing Company, Downingtown, Pa., passed away May 5, just after returning from a trip to Florida.

Mr. Miller was 76 years of age. More than fifty years ago he founded the Downingtown Manufacturing Company and was continuously identified with the company until the time of his death. He has been closely identified with the paper industry, both as a manufacturer of paper mill machinery and an inventor and stockholder in mill enterprises. He was widely known to the trade and held the friendship and respect of many of its most influential men.

◆ DENNIS J. GANTHIER, for the past nine years superintendent of the Files Fibre Co., Files City, Mich., resigned on May 1st, and has announced no definite plans for the future. On leaving the company, the employees presented him with a gold watch and chain as a token of their regard. Mr. Ganthier is succeeded by D. T. McCormick, formerly with the Central Paper Co., Muskegon, Mich.

Institute Is Host to Superintendents

Northwest Division spring meeting held amid educational setting of new institute at Appleton.

SOMEWHAT of a departure from the usual discussion of problems and interchange of ideas marked the spring meeting of the Northwest Division of the American Pulp and Paper Mill Superintendents Association attended by approximately 150 members at Appleton, Wis., on Saturday, May 7. The superintendents convened at the focal point from which new technical developments are destined to emanate in the future, the Institute of Paper Chemistry, conducted in connection with Lawrence college.

As guests of the Institute in the beautiful new building dedicated last fall, they learned what is being done to solve problems of manufacture, improve processes and evolve new information for the benefit of pulp and papermaking. It was an education in itself for the superintendents to visit the laboratories, work rooms and miniature pulp mill at the hands of instructors and students as guides, to see the many new devices in use, to delve into the chemistry and mechanics of papermaking. They saw the Institute in actual operation and witnessed new experiments, one of which is the measure of expansion of fibers by a mercurial weighing process.

Dr. Kress Explains Institute Courses

Assembling in the lecture room after they had registered, the superintendents heard an address by Dr. Otto Kress, director of the Institute, in which he explained the three-fold purpose of training chemistry graduates so they are fitted permanently for positions in paper mills; developing the most complete research library known to the industry, and conducting research, both in scientific advancement of papermaking and in co-operation with industries on specific problems. The library now has $25,000 invested in books in a number of languages, and has 96 scientific journals in its reading rooms.

Students are limited in number for two reasons, said Dr. Kress. One is to select, after exhaustive analysis, only those capable of ultimate success in the profession, and the other to send out graduates only as fast as the mills can absorb them. There are 80 applications on file for next year, but only about 15 will be chosen. Out of these are letters from European countries and the Orient, but the speaker said inasmuch as American money supports the Institute he considers it ridiculous to admit foreigners from areas of low wages and depreciated money. They are absolutely ruinous in their competition to American paper mills, he remarked.

In its third year of operation, the Institute is but on the threshold of its possibilities, Dr. Kress added. Already it has outgrown its original building and ground is being broken for another, to be a memorial to the late J. A. Kimberly, one of the founders of the Kimberly-Clark Corporation. Other buildings now in their "dream" stage will grace the six acres of land owned by the Institute, he said. It is becoming evident that co-operative research will be a tremendous field. No industry possesses the necessary equipment and staff of experts itself, he said, and they are already looking to the Institute to assist in solving specific problems. The DuPont company is making research experiments there now, going outside its own extensive laboratories for the first time because it lacked the necessary mill contacts for its project. Work also is being done for the Celotex company, a clay company, a starch concern and others in addition to paper mills now.

It was Ernst Mahler, vice president and general superintendent of the Kimberly-Clark Corporation, who conceived the need for a proper source of training for men in the paper industry, said Dr. Otto Kress, and he not only brought his ideas into fruition, but is serving the Institute well as president of its board of trustees.

Chemistry of Cellulose

Another speaker on the morning program was Dr. Harry F. Lewis, on the subject of the "Chemistry of Cellulose." After outlining the organic structure of cellulose and its chemical properties, he showed how the deductions of earlier day chemists have been set aside as the work of the laboratory progresses. The former beliefs relative to the changes induced by degradation processes are being discarded. It has now been determined that cellulose has a physical stability producing a surprising degree of resistance. The application of alkalines, sulphuric acid, oxygen and heat up to a certain degree produce no chemical change. They merely alter the physical structure. A determination of where the chemical changes begin will have an important bearing on the cooking processes of the future.

Colloidal Chemistry and Papermaking

Pointing to the futility of trying to give in one address even a smattering of what colloidal chemistry involves, Dr. Ben W. Rowland, another member of the Institute research staff, spoke only in general on the subject of "Colloidal Aspects of Pulp and Paper Making." It takes sixty-four hours of lecturing to cover the introduction to the subject alone. Colloid chemistry, he said, deals with the physical aspects of matter not lending themselves to the classical divisions of chemistry. It is possible to reduce almost any material to the colloidal or jelly state, but it is difficult to determine or retain the adhesion, as in the case of attempts to produce synthetic rubber and failing to reproduce the natural cohesive qualities. As applied to the paper industry, colloidal chemistry is a matter of determining the activity of surfaces, a study of electrons and molecules. Study is centered on the physical behavior of cellulose under various chemical and cooking processes. It is only during the last fifteen years that equipment and facilities have been available to make proper studies, and much new literature is now being produced that will throw light on this phase of pulp and papermaking.

After adjournment at noon, the superintendents were guests at a stag luncheon at the North Shore Country club and devoted the afternoon to social enjoyment and a golf tournament. The women were entertained at shopping and sightseeing tours, a luncheon and bridge at the home of G. E. Buchanan, secretary of Appleton Wire Works. Attractive prizes were awarded the winners.

Banquet Is Gala Occasion

With more than 200 persons present, the banquet in the evening at Conway hotel for superintendents and their wives was a fitting climax to the day's activities. Entertainment was plentiful, including instrumental and vocal music by artists of Lawrence Conservatory of Music, numbers by the 120th Field Artillery band, ventriloquism by Robert Neller, and a round of comedy by a "German" band. Harold A. Skinner, of the Marathon Paper Mills Co., Wausau, Wis., president of the Northwest division, presided as chairman, and R. M. Radsch, of the Appleton Machine Co., Appleton, served as toastmaster. Greetings were extended by the mayor of Appleton, John Goodland, Jr.

Dr. Wriston Describes Transition of Education

In the principal address of the evening, Dr. Henry Merritt Wriston, president of Lawrence college, described the transition of higher education to the system followed by the leading institutions of today which develops such enterprises as the Institute of Paper Chemistry. Contrary to the belief of many, he said, the colleges are no longer the cloistered, classical schools developing men only for the professions such as the ministry, teaching, medicine or law. They have gone through the same evolution as industry until today colleges provide a practical training that fits men for a useful life.

The impact of modern knowledge, so overwhelming in quantity no professor can master it all; the transition of emphasis from curriculum to the individual student and his needs; the change from seclusion to the solution of problems of the outside world—these have made the college a place where a boy or girl can learn an appreciation of the sense of values. They are taught what is worth while in life, especially as to material, intellectual and emotional values.

It is in the desire to bring about a practical solution of urgent problems that such institutions as the Institute of Paper Chemistry were conceived, said Dr. Wriston. Industrial research must stand on two feet, the pure science and the practical science. Theories usually are produced first in the college or university and it is generally understood that the college scientist usually is about seven years ahead of the practical scientist in this respect. An example is the vacuum tube invented by Thomas Edison, which was nothing but a toy for years but today is the basis of the great radio industry.

The Institute logically must be associated with a college, the speaker added, because it can draw on the faculty for the part time services of instructors, seven of whom assist the Institute in addition to five full time persons. Then there is the problem of dealing with students, which colleges understand better than industries. It is conceded that heavy concealed costs in industry are occasioned by the attempt to train men who either prove unfit or leave within a year or so for other fields, leaving the concern with a heavy overhead from which no benefit is derived. The Institute obviates much of this by its selection of students from a large body so it knows they are fitted for the particular work intended.

Roy Kelly, of Wausau, Wis., president of the American Pulp and Paper Mill Superintendents Association, spoke briefly at the banquet of the coming national convention at Buffalo, N. Y., urging a large attendance because of the importance of the program. Allen Abrams, also of Wausau, president of the Technical Association of the Pulp and Paper Industry, stressed the necessity of an open and receptive mind, and an analytical and observing mind as requisites of the successful superintendent of today. He urged his hearers to be willing to try new things at least once. Fred Boyce, the third member of what Toastmaster Radsch termed the Wausau "triumvirate," was introduced. He recalled the first meeting about thirty years ago, also held in Appleton, when the association was launched with only a handful of members and today has important divisions all over the country. He emphasized the trend of the future which will require trained men for superintendents' positions.

Convention arrangements were handled by a committee consisting of Alfred Agrell, Peter E. Jones, Dr. Otto Kress, R. M. Radsch and W. E. Buchanan. Others prominent in the activities were Frank J. Timmerman, of the Northern Paper Mills, Green Bay, vice chairman of the Northwest division, and Wallace Shymanski, of the Marathon Paper Mills Co., Wausau, secretary-treasurer.

Pulp and Paper Manufacture in Scandinavia

U. S. Attache Lund describes trade conditions and technical progress in Sweden, Norway and Finland.

AT a luncheon meeting of the New York Division of the Salesmen's Association of the Paper Industry on Monday, April 11, Marquard H. Lund, United States Commercial Attaché at Oslo, Norway, talked interestingly of conditions in the Scandinavian countries. After a reference to the advantages possessed by Swedish mills in the matter of cheaper raw material and improved equipment—pulpwood in half-peeled condition at the woods costing only $7 a cord—he contrasted mill equipment in Sweden and Norway. In Sweden, technical progress has been rapid, and considerable American equipment is used. Mr. Lund named American suction rolls, Oliver filters and Trimbey regulators as types of American machinery frequently seen in Swedish mills. The Morterud System of cooking by forced circulation was extensively employed in the Scandinavian countries. In Norway they are experimenting with a new system of cooking in which ammonia takes the place of soda or lime in combination with sulphur dioxide gas, the principle having been developed and patented by C. F. Cross and A. Engelstad. The pulp obtained by this process is similar to the sulphite pulp made by the older method but the quality is said to be better and the yield greater.

The Scandinavian pulp industry is almost wholly dependent on export trade, the home market being nil, and it was on this account, said Mr. Lund, that special attention was paid to economic developments affecting exports. Since Sweden went off the gold standard, France had put a special duty of 8 per cent on imports, this duty being exacted only of countries of depreciated currency. He spoke of the cartels or associations of manufacturers which were formed to overcome certain economic disadvantages. Finland has both a pulp cartel and a paper cartel, while Sweden and Norway have only one cartel.

The kraft industry has been greatly depressed on account of the imposition of a duty by England and the clamor by labor for higher wages. The wage rate in Norway is the highest of the three Scandinavian countries, twenty-five to thirty cents an hour being paid. Norway has sold 50 per cent of its newprint capacity for 1932. The rate of wages in Finland is lower than that prevailing in either Sweden or Norway. The import restrictions which are now enforced in various countries are being felt seriously in Scandinavian pulp producing regions, while the tendency in all countries to manufacture their own pulp supplies is also causing much concern.

Warren B. Bullock, manager of the Import Committee of the Paper Industry, inquired regarding the prices quoted in consular reports. He desired to know if these reports were based on actual sales. Mr. Lund said the figures were based on quotations published in the trade papers of Stockholm. Mr. Bullock said he was led to question the accuracy of the figures after seeing forty cents named in a consular report when it was known here that twenty-five cents would buy.

Mr. Lund said that the groundwood cartel in Norway had "blown up" and a bill was now before the Norwegian Parliament making it compulsory for manufacturers to be a member of the trade association, or cartel, before they would be permitted to export goods. Nearly all manufacturers of pulp in northern Europe belong to the sulphite cartel.

Touching on technical developments in the Scandinavian industry, Mr. Lund spoke of the new sulphate mill of the Swedish Pulp Company at Ostrand in which the equipment represented the last word in improved machinery that make for economical manufacture and high quality of product. He instanced the new system of drying pulp employed there, in which currents of hot air rather than hot cylinders are used to deprive the pulp of excess moisture.

Mr. Lund asked what the highest speed of newsprint machines was in the United States and Royal S. Kellogg, secretary of the Newsprint Service Bureau, said 1,200 feet a minute. Mr. Kellogg spoke of a machine operating on tissue at the Scott Paper Company mill in Chester, Pa., which runs at a speed of 1,000 feet a minute, a remarkable speed for tissue manufacture. Mr. Lund said that 700 feet a minute was the highest speed for Norway on newsprint. The Norwegians are now buying paper machinery in England.

Labor, according to Mr. Lund, is better organized in Scandinavian countries than in the United States. In one mill he observed a machine being operated on which it was evident that more men were employed than was necessary. He spoke of this to the manager, who said: "Well, we could operate with fewer men, but if we let one go, the rest of the mill would walk out and there might be a general strike."

Norway, Sweden and Finland are suffering from competition with Russia and it is unlikely that there will be any expansion of the industry in Sweden.

Frank H. Purrington, Eastern Manufacturing Company, presided as chairman and he received reports from fifteen or more members regarding the condition of business as mill representatives for their respective lines. On his motion a rising vote of thanks was given to Mr. Lund for his interesting account of conditions in the Scandinavian countries.

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◆ THE New York office of the Stickle Steam Specialties Company has been moved from 280 Madison Ave. to 11 West 42nd Street.

POWER

GENERATION + UTILIZATION + MAINTENANCE

By W. S. JOULE

This section turns the searchlight on power and its allied problems, showing big possibilities to save. Opportunities to improve conditions, methods, apparatus will be discovered. Worth while practices suggest new ideas and wider usages of equipment.

◆ Operation of Evaporators

Evaporators are beginning to find an important place in industrial power plant work, sometimes for making pure boiler feed makeup water and sometimes as a source of low-pressure process steam where it is desired to utilize a closed boiler feedwater circuit, especially in connection with high-pressure boilers and generating equipment. Study of their uses well repays the power engineer. For those who already have them installed, some rules for their operation, as given by the N.E.L.A., should be of value.

When putting an evaporator into service, make sure first that water supply lines and exhaust steam lines to the evaporator heater are in proper operating condition. Then start the evaporator feed pumps and see that all blowdown valves are closed and that the vent of each shell is open. Fill each shell to the operating water level, usually indicated by a mark on the shell, a certain number of inches above the center line of the manifold. Open the vents on the traps on both high-pressure and low-pressure coils.

Next open wide the vapor valve on the first effect, then the vapor valve on the second effect and finally open slowly the high-pressure steam valve to the first effect coils, noting that the reducing valve maintains the proper gauge pressure (determined by data from maker or from previous operating experience). Maintain the required steam pressure by adjusting the boiler feedwater supply to the de-superheater. See that the trap is functioning on the steam separator and close the vents on the shells when the steam appears. Build up the pressure in the shell of the first effect slowly, until it reaches the predetermined value, by increasing the live steam supply to the coils of the first effect until the proper temperature is maintained at the entrance of the coils.

To take an evaporator out of service, first close the high-pressure steam valve to the first effect coils, then close the water line to the de-superheater. Make sure that the float valves shut off the water after evaporator stops. Close the vapor valve on the second effect shell, shut down the evaporator feed pump and divert any trap discharge or drains entering the shell to another heater or to free blow.

◆ Corrosion by Flue Gas

Action of flue gas on boiler room equipment has often been discussed by power plant engineers but not until recently has the subject been investigated in a scientific way. Now, however, the Engineering Experiment Station of the University of Illinois has issued a bulletin giving the results of an investigation of corrosion by flue gas, made in 15 plants, using all types of firing equipment, steam pressures from 225 to 700 lbs. and various types of fuel, so that the operating practices were diversified enough to cover most conditions met in practice.

While corrosion did not always result from high sulphur content of the fuel, especially in pulverized coal plants, it was most frequent when the sulphur was over 2 per cent and none occurred when the sulphur was less than 2 per cent. Corrosion was greatest with coals high in ash and with high draft, and was often accompanied by slag formation on tubes.

Of the sulphur in the coal, 70 per cent was carried into the gas in stoker-fired plants and 90 per cent in pulverized coal plants. In the latter, however, sulphur trioxide concentration in the gas is lower.

Corrosion is most severe, it is stated, at dew point temperature, which was found to vary between 115 and 151 deg. Fehr. This is because a liquid film may be deposited on metal surfaces which will carry corroding agents in solution into close contact with the metal. Presence of moisture from leaks, as at economizer tube ends and collection of dust are consequently important factors influencing corrosion.

In some cases, greatest corrosion was found in preheaters ahead of the air intake when the metal temperature was 300 deg., or less. Corrosion, if it occurred at all, was slight at higher temperatures. It was greatest, in other cases, near the gas entrance to the heater but extended only a short distance from that point.

For clean surfaces, it was found that metal temperature at the cold end would be the average of air and gas temperatures. At the hot end it might be that average plus 10 deg. These temperatures would be lower for dirty surfaces.

To reduce preheater corrosion, recirculation of heated air and parallel flow may be employed. Both these remedies, however, reduce heater capacity. Erosion of the surface aids corrosion, consequently both can be reduced by reduction of ash particles in the gas before it enters the preheater.

Corrosion in economizers is most severe where leaks occur at rolled tube joints, especially if a slight leak rapidly increases, when the corrosion will spread to nearby tubes wet by steam and coated with flue dust.

When metal surfaces are at 260 deg. or below, corrosion may start, the surfaces becoming rough and pitted. Incorrectly operated soot blowers may give off moisture that will add to the corrosive effect.

Several things may be done to lessen economizer corrosion. Among these are: use of high grade coal, with low sulphur and ash content; elimination of cold water strains.

New designs of economizers with all joints outside the path of flue gas are intended to stop tube losses.

In preparation of coal, washing to remove the heaviest 10 per cent, in the case of most Illinois coals, took out 25 per cent of the ash and 25 to 30 per cent of the sulphur. Removal of 10 per cent of the coal weight resulted in the removal of only 4 per cent more of the ash and 10 per cent more of the sulphur.

◆ Mechanical Soot Blowers

While every boiler room is different, to some extent, every boiler room faces the same fundamental problem of developing the maximum heat from a minimum amount of fuel. Wherever coal is burned, soot is formed, and soot is one of the best insulators known. Consequently, every boiler room, to be efficient, faces the eternal problem of fighting soot. The mechanical soot blower is the modern way of fighting soot—is the only way that enables soot to be removed as it forms; that enables cleaning to be done when cleaning is needed. There are six fundamental reasons why mechanical soot blowers are a good investment. These are:

1. Save fuel—usually 5 to 12 per cent.
2. Eliminate forced shutdowns and overtime for cleaning purposes.
3. Clean when cleaning is needed.
4. Do a good job, surely.
5. Don't subject the men to dirt, discomfort and dangers.
6. Safety first—employee welfare.

◆ YOU PAY for ash at the price of coal. There is a direct relation between ash content and the heat value or B.t.u. As the per cent of ash increases the heating value decreases, and vice versa. A good rule is that each 1 per cent change in ash is equal to from 130 to 165 B.t.u., depending upon the kind of coal. There is always some ash or residue. Much of that in the ash pit is carbon or unburned coal.

The Use of Paper Pulleys in the Hawley Pulp & Paper Plant

By THOMAS PARKS

Plant Engineer

I AM told that there is apparently a wide divergence of opinion among paper mill superintendents as to the adaptability of paper pulleys to paper mill drives. Some plant men in paper mills have used paper pulleys in damp places and had excellent results. Others have had the feeling that they might not operate with success if exposed to water or steam.

In our plant, we have quite a large number of paper pulleys in use on motors throughout the mill. A great majority of these pulleys were originally furnished when the motors were purchased.

It has been our experience that when operating under normal conditions, moisture has very little effect on them . . . either in the beater rooms or the digester buildings, where they are subject to acid fumes and also to excessive moisture conditions.

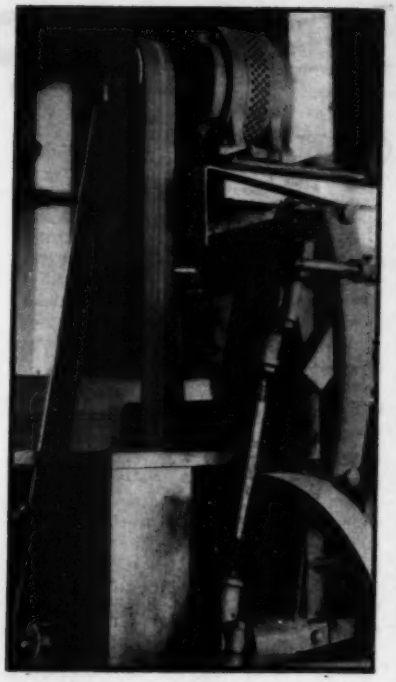
On the other hand, if conditions exist such as beaters overflowing on to the pulley or belt, the whole drive is temporarily put out of service—that is, as far as power transmission is concerned—whether it be a paper pulley or a cast iron pulley.

If a paper pulley is used when this overflow occurs, the pulley and the belt would both, of course, require immediate attention, necessitating a thorough wiping down as a mere matter of precaution so that the moisture would not penetrate. Dry compressed air will usually suffice and do the job quite satisfactorily.

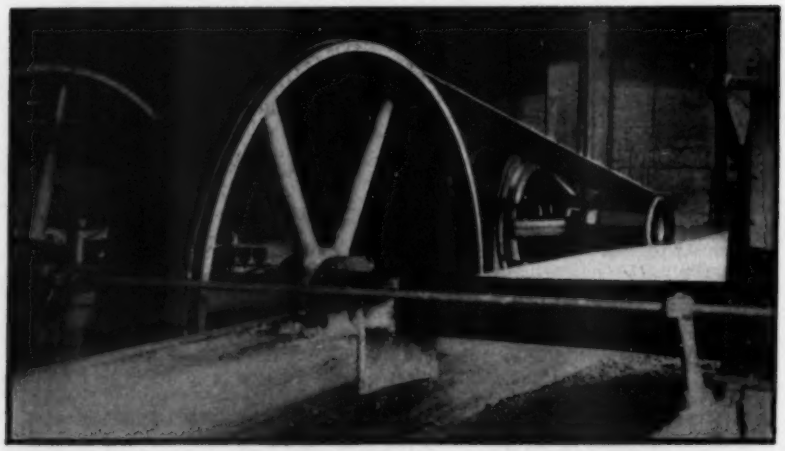
In former days, we have seen the time when paper pulleys deteriorated very rapidly if exposed to moisture when the pulley was not in use. However, the pulleys have been greatly improved in their waterproof qualities in recent years. Ordinary paper pulleys are resistant to moisture and machine oil, and an especially waterproof paper pulley can be specified in which all of the fibers in the pulley are entirely surrounded by a waterproofing material or binder. They stand up under any waterproof conditions.

Due principally to the higher pulling power and reduction in slip against an iron pulley, our experience has taught us that a paper pulley is superior in every respect. Not the least of which is that with its higher co-efficient of friction, the belts do not have to be run as tight—which saves power.

Sulphite decker drive



Guillotine cutter drive



End view of drive on beater

	Diam., Inches	Face, Inches	Motor No.	Driving	
MILL	12½	10	61	Oil Saturating Machine	
	8	7	413	Broke Baler	
	5	4½	412	Core Crimper	
	18	20	91	No. 5 Beater	
	18	20	92	No. 6 Beater	
	7	7	121	Main Exciter	No. 3 P.M.
	7	4½	.....	Slitters	No. 3 P.M.
	14	10	52	Winder	No. 3 P.M.
	8½	6	56	Ream Cutter	No. 3 P.M.
	8	8	94	Lay Boy	No. 2 Finishing
	6½	4½	104	Slitters	No. 2 P.M.
	11½	10	50	Winders	No. 2 P.M.
	7	5	65	Line Shaft	Print Shop
MILL	19	22	9	Broke Beater	
	8	7	410	Broke Baler	
	10	10	141	Main Exciter	
	13½	14	89	Vacuum Pump	
	11½	10	.....	Broke Beater Pump	
	5½	4	204	Decker	
	6	6	53	Slitters	
MILL	9½	10	134	Stock Booster Propeller	
	5	5½	17	Drilling Rig-Temporary	
	20½	19	32	No. 2 Chipper	
	7½	6	170	Trash Conveyor to Oven	
	23	21	35	Line Shaft	
MILL	8½	9	10	Street Elevator South	
	7	9	110	Spare in Basement	
	20½	19	241	Double-extended Shaft	
	20½	19	241	Two Beaters	
	8	7	261	Rewinder	
	9	5	259	Ream Cutter	
MILL	4½	7	.....	Incline Conveyor Shredder	
	5½	6	.....	Portable Conveyor Shredder	
	10	6½	399	Jumbo Exciter	
	10	9	1	Long Conveyor to Grinders	
	10	7	81	Cross Conveyor	
HYDRO	9½	9	.....	No. 1 Exciter	
	12	12	.....	No. 2 Exciter	
	8	7	72	Machine Shop Line Shaft	
	10	8	34	Carpenter Shop Line Shaft	
	5½	4½	309	Electrical Shop Line Shaft	
SPARES	17	19			
	10½	8			
	10	9			
	8	11			
	7	5½			
	4½	5½			

Booster pump drive

One thing I would suggest, and that is paper pulleys be used with endless belts wherever possible. At least extra care should be taken when belt hooks are used. The soft surface of paper pulleys is what gives them high belt grip, but this also permits easy damage when belt hooks or rivets project beyond the belt surface. If you have paper pulleys that show grooves or ridges in the face, check your belt carefully, and nearly always you will find the trouble there.

When paper pulleys are to be stored in damp places for a long time, it is a good plan to paint them first with a good grease or heavy belt dressing. With such reasonable care, paper pulleys will last indefinitely.

If anyone would be interested in the number and sizes of paper pulleys used in our plant, the list is presented herewith on the opposite page.

◆ An Improved Type of Flexible Coupling

Power transmission with flexible couplings has been advanced considerably by developments made by the F.A.B. Manufacturing Co., according to its engineers. An improved type of flexible coupling, which is expected to overcome faults previously associated with drives of this kind, is announced by the F.A.B. organization. The new coupling, in addition to compensating for parallel and angular misalignment, or combinations of both, embodies a shock-resisting feature and method of eliminating vibration. The manufacturers state that no lubrication is required and claim that the improved coupling will operate noiselessly at 3,450 r.p.m. It is being manufactured in sizes up to 1,200 h.p. Complete information and a new bulletin may be procured from the manufacturers, 67th and Vallejo streets, Oakland, California.

◆ Soft Rubber Applied Directly to Metal

Nearly a ton of soft rubber has just been applied to each of two of the largest rolls used in the United States paper industry by The B. F. Goodrich Company at its plant in Akron, Ohio, using the exclusive patented vulcalock method of attaching soft rubber directly to metal.

These two smoothing press rolls for the Champion Fiber Company plants at Canton, N. C., are each 241 inches long and 32 inches in diameter. Each weighed approximately 11 tons before the soft rubber surface was applied. There were 1986 pounds of soft rubber put on each of the rolls made of cast iron. The rubber was vulcanized on each roll in a single operation.

One of the most interesting of the technical operations in the application of the soft rubber roll was the grinding of crowns on each. The crown on one is 110 thousands of an inch and on the other 130 thousands of an inch, tapering gradually from the center to the outer edge of the roll.

Before putting the vulcalock process into operation, the surface of the metal core had to be thoroughly cleaned. The vulcalock process was patented November 2, 1926, after months of research in the Goodrich laboratories. Besides its application on rolls used in paper industry operations, other successful uses of the vulcalock process have been in lining tanks used in the chemical industry, linings for ball mills for the ceramic and chemical industries, gravel chutes, launder chutes, dredge pump linings, exhaust fan linings, and covering metal for resistance against gases.

1986 pounds of soft rubber were applied to this 32x241 inch roll of the Champion Fibre Co. mill at Canton, N. C., by the B. F. Goodrich Rubber Co. using its exclusive patented Vulcalock process of attaching soft rubber directly to metal.

◆ Pittsburgh Equitable Meter and Merco-Nordstrom Consolidate

Announcement is made of the consolidation of two well known industrial firms identified with many industries. Pittsburgh Equitable Meter Co. and Merco-Nordstrom Valve Co. are joining interests. Arrangements have been completed for the Pittsburgh company to acquire all the capital stock of Merco-Nordstrom Valve Co. and the latter will operate as a division of Pittsburgh Equitable Meter Co.

The Pittsburgh concern is one of the leading manufacturers of meters and regulators, and was founded by the late George Westinghouse. The valve company was founded by S. J. Nordstrom, who invented the "Sealdport" type of lubricated plug valve which is extensively used in the chemical, oil, gas, paper and power industries and in the municipal field.

W. F. Rockwell of the Pittsburgh company becomes president of Merco-Nordstrom Valve Co. Warehouse stocks for both companies are to be carried in Los Angeles, Kansas City, Chicago, Columbia (South Carolina), and certain other points. Sales offices of each company will be available to the other, according to W. F. Rockwell. It is the intention of the enlarged organization to add new products and accessories to the present line of valves, meters and regulators.

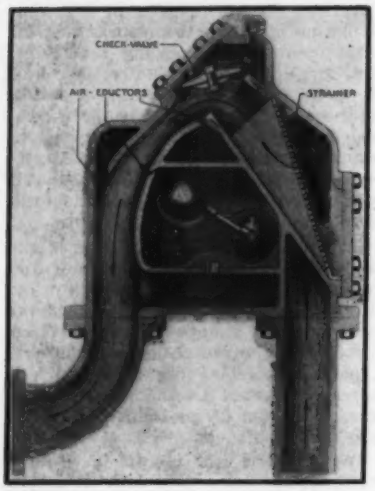
◆ THE RELIANCE Electric & Engr. Co., Cleveland, has established a sales branch in Grand Rapids, Mich., in

charge of Marshall T. Ball. The office will be located at 208 Fuller Avenue, S. E., Grand Rapids. Mr. Ball has had a wide experience with electrical equipment and is able to give the very best service in this district. He will cover Northeastern Michigan.

◆ Suction Line Primer

A new priming device for centrifugal pumps has been announced by Barrett, Haentjens & Company, Hazleton, Pa.

The device combines in one compact casting a check valve, strainer and air removing device. It is built in various sizes, for a maximum capacity of 1,500 g.p.m. and a maximum operating head of 200 ft. When furnished with a special control panel, it makes possible automatic operation of the pump with complete protection against loss of water, air leaks, break of the column line, etc.



Bulletin No. 530 will be sent upon request to those interested.

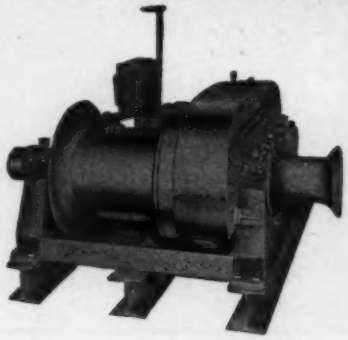
◆ Combination Drum and Capstan Car-Puller

This combination type of drum and capstan car-puller for "spotting" a train of loaded railroad cars in either direction and at slow rope speed has very much simplified the handling of cars in the yards and at platforms.

One man operating a car-puller of this type has complete control of all car replacements. For handling long hauls of 900 feet and under, steel cable is used on the drum; for shorter hauls of less than 300 feet, the capstan is used to advantage with manila rope.

This new drum and capstan car-puller supersedes the former type which has been on the market for the past twelve years. The car-puller is furnished in 7½, 10, 15 and 20 hp. motor ratings for "spotting" a train of 500 tons and under. Some of the special features embodied in its design and construction are as follows:

A double V-shape friction clutch (asbestos lined) and the improved type of screw thrust, assures positive grip and



release of the drum by a slight movement of the operating lever protecting both the motor and mechanical construction of the car-puller against excessive strains and shocks when starting a heavy pull.

The triple spur gear drive is of steel and enclosed in an iron housing as illustrated. The main operating lever, motor control switch, and foot brake are all within easy reach of the operator. The complete car-puller is mounted on a steel I-Beam sub-base. Bulletin No. 115-A describes the new car-puller in detail.

◆ Guard for Board Rewinder

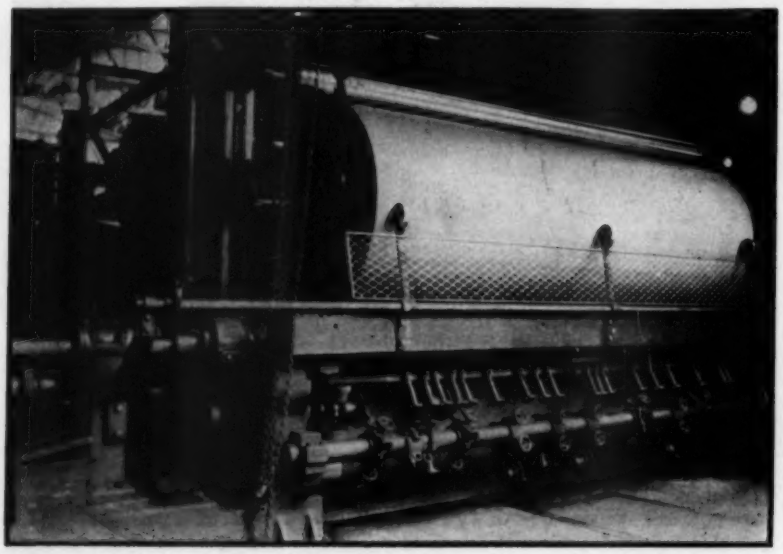
A guard that has proved to be a positive protection to workmen operating a rewinder on a paper board machine, is shown in the accompanying picture.

This guard which has been installed in the Philadelphia Division of the Container Corporation of America, is made on a revolving shaft, on the extreme end of which is an eccentric cam counterweighted to hold the guard in position.

The construction of the guard is such that it does not ride on the roll until the latter has been built up as shown in the illustration, and from then it does until the roll is completed.

To remove the roll from the rewinder, the operator pulls the guard down over the front of the slitters. It is just enough in the road that in order to operate the rewinder efficiently, the guard must be used properly.

The three riding wheels are of aluminum and are fitted with ball bearings. They do not mark the sheet. The cam is 8⅜ inches in diameter, offset 2 inches from center, and the riding wheels are 4 inches in diameter.



◆ Apmew Organizes New Affiliated Company

Announcement from the American Paper Machinery & Engineering Works, Inc., Glenns Falls, N. Y., states that the Allen Paper Machinery and Engineering Works, Inc., has been formed for the purpose of manufacturing and selling Apmew Proportioning and Metering Systems, Apmew Recording Consistency Regulators and Apmew Recording Paper Stuff Regulators. Exclusive rights to license users for the Direct Application of Continuous Proportioning and Metering Systems have been transferred to the Allen company.

The incorporators are C. H. Allen, H. D. Wells and V. H. Wells. H. D. Wells is president and general manager of the American Paper Machinery & Engineering Works, Inc.

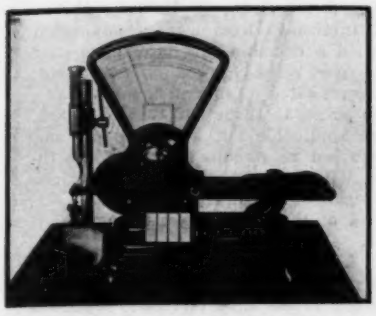
◆ THE FARVAL Corporation, Cleveland, Ohio, has recently acquired the manufacturing and sales rights of the Farval centralized system of lubrication. This equipment was formerly manufactured by Lubrication Devices, Inc., Battle Creek, Mich.

◆ FRANKLIN G. SMITH, president of The Osborn Mfg. Co., Cleveland, announces an important addition to the company's activities. A complete line of overhead materials handling equipment, to be known as Osborn Tramrail Systems, has been designed and built in the new Materials Handling Division.

◆ A Paper Stiffness Tester

New standards of speed and accuracy in testing the stiffness of bond, ledger and folder stock are achieved by the Toledo Paper Stiffness Tester, originally developed by Remington-Rand, Inc., and now manufactured by Toledo Precision Devices, Inc. This attachment is mounted on a Toledo paper ream autogauge and combines in one device both the weighing operation and the stiffness test.

This attachment for testing stiffness consists of a special bracket supporting an adjustable loading member which



contacts one end of a sample to be tested. The other end of the test strip rests on an aluminum plate on the scale arm. Mounted on the Toledo paper ream autogauge, it does not, in any way, interfere with the use of that device for determining ream weight.

It is simple to test paper stiffness with this device. Ten strips, one inch by three, are taken as samples of the lot to be tested. Ten strips should be cut each way of the grain in the paper. In testing, five strips should be tried with the felt side out; the remaining five with the wire side out. The results of ten tests will give a reliable average stiffness of the lot in question.

In testing, each strip is inserted in the gap between the aluminum plate and the end of the plunger. The handle is then turned slowly and steadily to bend the paper. This pressure is accurately indicated on the chart. The maximum point registered represents the stiffness. In this way, stiffness is tested accurately and with a large time savings since it can be done at the time of the ream weight test.

Full details can be secured on application to Toledo Precision Devices, Inc.

◆ Link-Belt Appoints Watson Head of Indianapolis Plants

James S. Watson, formerly vice president in charge of Link-Belt Company's Dodge Works, Indianapolis, has been appoined vice president and general manager of both the Dodge and the Ewart Works, the company's two Indianapolis chain factories, thus succeeding George P. Torrence, who was recently elevated to the presidency.

Frank S. O'Neil, formerly manager of the Ewart Works, has been appointed assistant general manager of both Indianapolis plants. C. Walter Spalding, who has been with the Ewart Works for a number of years, has been appointed sales manager of Ewart plant products.

◆ E. D. Jones & Sons to Manufacture in Canada

E. D. Jones & Sons, Pittsfield, Mass., announce the consumption of arrangements with Canadian Allis-Chalmers, Limited, Toronto, Ont., for the latter to manufacture and sell the well known Jones paper mills products to Canadian customers.

With this new representation it has been arranged to co-ordinate the work and interchange of information between the respective engineering and manufacturing departments so as to insure that the Jones "Made in Canada" products will compare exactly with the usual, recognized high standard quality of workmanship, materials and design of Jones machinery.

While the above arrangement provides for the manufacture and sale of Jones products in Canada, it has been pointed out that it is optional with the company's Canadian customers whether the Jones machinery be manufactured and sold in Canada or manufactured and sold direct from the shops in Pittsfield, as in the past.

◆ New Luitwieler Corporation

The Luitwieler Corporation has purchased all rights, title and interest in the assets and business of the Luitwieler Pumping Engine Co., Rochester, N. Y., and will continue the manufacture and sale of all the products heretofore manufactured by that company.

F. H. Kelliher is president of the new company; Norman E. MacLeod is secretary and treasurer.

◆ Our Imports of Swedish Pulp and Paper

Chemical woodpulp is by far the most important single article in Sweden's export to the United States. In 1911 she sold to the United States 65,730 tons of chemical woodpulp valued at 8,342,257 kronor; the sales have since grown enormously. Unbleached sulphite and sulphate are the largest items, but bleached sulphite also enters in considerable quantities. In 1921 the sales of chemical woodpulp to the United States were 190,862 tons valued at 49,986,348 kronor; in 1930, 635,292 tons valued at 107,985,234 kronor.

Next to Canada, Sweden now is the largest purveyor of chemical woodpulp to the United States whose share in her export thereof in 1930 was 41 per cent of unbleached sulphite, 31 per cent of bleached sulphite, and 59 per cent of unbleached sulphate, says a writer in the *Swedish-American Trade Journal*. Sweden's export of mechanical pulp also has grown since 1911 and was 15,710 tons, valued at 1,494,245 kronor, in 1930—6 per cent of her total export of the article.

In Sweden's export of paper to the United States, newsprint and wrapping paper predominate. Figures are not available for the year 1911, but in 1921 Sweden sold to the United States 52,538 tons of newsprint valued at 24,667,846 kronor and 3,296 tons of wrapping paper valued at 1,561,229 kronor. The newsprint export to the United States has since increased and was 62,535 tons valued at 12,506,231 kronor in 1930. The wrapping paper export had increased to 12,697 tons in 1924 but has since fallen off; in 1930 it was 3,916 tons valued at 1,246,787 kronor, mostly kraft paper.

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◆ New Catalogues and Publications

Paul O. Abbé, Inc., Little Falls, N. J.—A new catalogue of 119 pages, covers the complete line of this company's pebble and ball grinding mills and mixers. There are sections covering porcelain jar mills; all-steel standard pebble mills for paint, etc.; for dry and wet grinding; metal ball mills, and mixers. These mills and mixers come in a large number of types for various uses, all of which are fully illustrated, with descriptions and dimension tables.

Foster Wheeler Corp., New York City—The various types of boilers made by this company are featured in a new catalogue, Bulletin B-32-3. The first part of the catalogue is devoted to a description of sectional header boilers for stationary plants, which boilers are made in both cross drum and longitudinal drum types. This is followed by a section given over to bent tube boilers. The last part is devoted to marine tube boilers. There is also included a description of extended surface type boilers for the recovery of heat from internal combustion engine exhaust and industrial processes.

Hermann Manufacturing Co., Lancaster, Ohio—"Pulp Testing Apparatus" is the subject of a bulletin just issued. The apparatus and method recommended by the British Pulp Evaluation Committee have been evolved by extensive research from the equipment and procedure devised by Messrs. Clark, Cottrall, Prior and Underhay, a portion also being based on the independent investigations of Messrs. Macdonald and Cramond. The complete set of calibrated sheet-making apparatus is described in this bulletin, and is obtainable through the Hermann company which is licensed under the British Papermakers Association. A number of illustrations and diagrams are shown.

Hyatt Roller Bearing Co., Harrison, N. J.—This manufacturer of roller bearings, by way of celebrating its fortieth birthday, has issued an attractive anniversary book. The principles, materials and workmanship employed in the making of Hyatt bearings are skilfully brought out in the text; while the illustrations tell the story of their manufacture pictorially. The book is nicely bound in blue cover, stamped with gold.

Paper & Textile Machinery Co., Sandusky, Ohio — "Sandusky Centrifugally Cast" is the subject of Bulletin 532, in which the merits and quality of the Sandusky line of centrifugally cast products is set forth. The bulletin contains general information in brief form, and a table of standards and specifications is given.

Troy Engine & Machine Co., Troy, Pa.—A 12-page educational bulletin, just issued, is based on surveys made in various parts of the country, of varied applications under different operating conditions. This was done to not only afford interested investigators an opportunity to grasp the extent of the economies made possible by the use of this company's equipment, but to also provide a range of applications among which would be found a guide to the reduction of power costs. Six outstanding surveys are published in this bulletin, and any parties interested in power economy may obtain a copy by addressing a letter to the company on their firm's letterhead.

The MONTH at WASHINGTON

BUSINESS CONDITIONS—Credit expansion is aiding business recovery according to a statement issued by the Secretary of the Treasury, and it is the policy of the federal reserve banks and other federal agencies to restore confidence. The month of March witnesses a further substantial reduction in the number of bank failures—one of the most disturbing influences to continued depression—and this position was even bettered in April. Bank suspensions numbered 342 in January, were cut to 122 in February, 45 in March and down to 15 in April. With the money situation stabilized, business will soon be on the upswing, as confidence is restored in the public mind.

Doings in Congress—A bill recently introduced in the Senate (S. 4429) by Senator Fletcher would cause the Department of Labor to ascertain the average purchasing power of the dollar in the wholesale commodity markets and have government agencies restore and maintain it at a certain level by the expansion and contraction of credits and currency. In the House a similar bill (H. Res. 188) for increasing and stabilizing the price level of commodities has already been passed on by the House Committee on Banking and Currency after extensive hearings were held.

Another bill (H. R. 10564) would fix the rates of postage on catalogues exceeding 8 ounces in weight, accepting them from mailing at 1c for each 2 ounces, except when the postage at the rates prescribed for fourth-class matter is lower, in which case the latter rates shall apply, provided copies of such publications are presented for mailing, made up according to states, cities and routes. This bill applies to certain publications weighing more than 8 ounces which are circulated free, or mainly free. At the present time, such publications are paying this rate on weights up to 8 ounces and the bill would permit the extension of the rate beyond the 8-ounce limit.

A similar bill is H. R. 6688 concerning publications issued at regular intervals of 12 or more times a year, 25 per cent of whose pages are devoted to text or reading matter and not more than 75 per cent to advertising matter.

A novel bill introduced in the Senate (S. 4126) would increase the commerce and serve the industries of the United States by creating a World Commerce Corporation—a private corporation to provide for the establishment, maintenance and operation of foreign trade zones in or adjacent to any of the ports of entry of the United States; to provide a clearing house for commerce where samples of any natural or artificial products of commerce may be exhibited and facilities furnished to prospective buyers and sellers to inspect them, thus to effect world-wide distribution of such products, etc.

A bill introduced in the House (H. R. 10706) would insure payment of bank deposits in national banks and other member banks of the Federal Reserve System.

Another bill (H. R. 10246) would amend the National Banking and Federal Reserve Acts to provide a guaranty fund for depositors in national banks. It is claimed that hoarded funds would be released through its enactment. A minimum capitalization of $50,000 would be provided for all national banks while stockholders would be relieved of the double liability now attaching to shares of bank stock.

Other bills designed to prevent future repetition of the calamity which followed the closing of so many banks throughout the country in the period of the depression, beginning in 1929 and ending in 1932, include H. R. 10040 and H. R. 10242 and S. 3215.

The Capper-Kelly Fair Trade Bill (S. 97) seems to be no nearer a decision than it has been since it was introduced. The Senate Committee on Interstate Commerce has, however, concluded its hearings on the bill. As usual, it has its quota of opponents and proponents, who argue for and against unfair price competition, with price maintenance as the desideratum and price cutting as the bane of our business existence.

In order to strengthen the bankruptcy laws a bill has been introduced in the House (H. R. 9968) and one in the Senate (S. 3866) to practically rewrite the existing statutes on the subject and to establish a more uniform and equitable system of bankruptcy throughout the country.

Revised Parcel Post Rates—The revised parcel post rates recently approved by the Interstate Commerce Commission will become effective Oct. 1, 1932, so as to give all concerned adequate opportunity to adjust their catalogues, price lists and other kindred matters. And by that time it is also hoped that business conditions will enable both shippers and their customers to absorb the moderate increases ordered without undue hardship.

Metropolitan Districts—A report of great interest and general value in the field of marketing, covering the 96 major metropolitan districts in the United States, has just been published by the Census Bureau, containing a map of the United States showing the location and relative importance from a population standpoint of each district, and a full page map of each area giving the minor political divisions of the cities and surrounding suburbs. Tables accompanying the maps give detailed statistics on the population of each of these divisions separately. The 96 districts comprise 45 per cent of the total population of the United States.

Business Failures—Illness was given as a cause of failure in 41 out of 487 cases of business failures analyzed by the Bureau of Foreign and Domestic Commerce in a report recently issued on causes of business failures and bankruptcies.

Interstate Commerce Rulings—In United Paperboard Co., Inc. vs. Minneapolis & St. Louis R. R. (No. 23872) the Interstate Commerce Commission held in a decision just laid down that the export rates charged on strawboard, not corrugated or indented, in carloads, from points in Illinois to Laredo, Texas, were applicable but unreasonable, and prescribed reasonable rates for the future, with reparation. Violation of the aggregate-of-intermediates clause of section 4 of the act was set up by claimants.

In I. and S. Docket No. 3618, re paper and pulpboard from Richmond, Va., to Eastern Trunk Line territory, proposed revision of less than carload rates on wrapper paper were found not justified and the suspended schedules were ordered cancelled. Protest was lodged by the Albemarle Mfg. Co.

In Saniwax Paper Co. vs. Ann Arbor R. R. (No. 23193) the commission found that rates on printed waxed-paper wrappers, in less than carloads, from Kalamazoo, Mich., to points in official and western classification territories were not unreasonable and the complaint was dismissed. The complainant claimed that the second-class rates were unreasonable to the extent that they exceeded the contemporaneous third-class rates.

In California Fruit Wrapping Mills, Inc. vs. Great Northern Rwy. (No. 23799), the commission found that rates on fruit wrapping paper, in carloads, from Pomona, Calif., to certain destinations in Oregon and Washington were not unreasonable, but were unduly prejudicial. Reparation was denied. Complainant alleged that the rates from Washington and Oregon mills to destinations in southern California were on a much lower basis than from Pomona to destinations in Oregon and Washington.

Publications—Newest available data indicating the location, size and purchasing power of domestic markets for the products of American industry are presented in a report, "General Consumer Market Statistics," made public by the Department of Commerce recently. The new handbook represents one of the most comprehensive collections of marketing information ever brought together in one volume.

New bulletins recently issued by the Department of Commerce are Simplified Practice Recommendation R107-31 on Glassine Bags and Miscellaneous Publication No. 136, Bibliography on Standardization.

NORTHERN NEW YORK

◆ St. Regis Ships Paper via Lakes to Montgomery Ward

To effect a substantial saving in transportation charges, the St. Regis Paper Co. will ship its contract of paper by water to Montgomery Ward & Co., Chicago, during the season of lakes navigation this year. Approximately 2,400 tons of paper a month will be shipped by the water route. It is the first time the St. Regis has used the lakes in making deliveries under this contract, which is a ten-year agreement with about half of its term yet to run. The saving in transportation charges will average $1.50 to $2 a ton, it is estimated.

The paper is a newsprint grade designed for catalogue purposes and will be used in the making up of the enormous number of catalogues sent out by this big mail-order and chain-store house. Shipments will start from Ogdensburg and go up the St. Lawrence river and through the lakes via the Welland canal. The paper will be carried from Deferiet, Norwood and Norfolk mills of the St. Regis by rail to Ogdensburg, where it will be loaded aboard boats of the Sullivan Boat Co. of Chicago. It is expected that the first shipment will go May 15 and from that time on until the close of navigation on the lakes the latter part of November they will move by water. Each cargo will amount to 1,000 to 1,200 tons, and there will be a shipment every two weeks, totaling about 50 carloads for the season. Approximately 25,000 to 30,000 tons of paper are delivered to Montgomery Ward yearly under this contract.

◆ John G. Jones

John G. Jones of Saratoga Springs, 69, for years connected with the paper industry in Northern New York, died in an Albany hospital Sunday, April 10. Mr. Jones entered the employ of the Ticonderoga Pulp & Paper Co. of Ticonderoga, Essex county, as a chemical engineer when a young man. In 1894 he moved to Carthage where he was made a partner in the Spiro & Wendler Machine Co., predecessor of the present Carthage Machine Co. In 1902 he organized the New York Lime Co. of Carthage and served as its president during the several years of its existence.

He was the inventor of a number of processes in the treatment of lime, and of apparatus used in making of pulp and paper. He also marketed digesters for the cooking of wood chips for the manufacture of chemical pulp and traveled extensively in their sale. Following his retirement from the paper business, he became superintendent of the state reservation at Saratoga Springs, a position he had held for the past 16 years.

◆ THREE MULTI-WALL bag machines of the improved type being manufactured by the Coty Machine Co., Inc., of Watertown have just been shipped by that concern to the Bagpak, Inc., in Philadelphia, Pa. The machines make both valve and open-mouth pasted bags in stock of one to five walls. This is done at very high speed and the product can be turned out in a wide range of sizes.

◆ THE MILL of the Cliff Paper Company at Niagara Falls, N. Y., which was the first groundwood and newsprint mill in the United States to install a magazine grinder of the early Voith pattern, suspended operations on May 1, after an existence of forty-three years. The company was incorporated in 1889 by Arthur C. Hastings, a former president of the American Paper and Pulp Association.

PACIFIC COAST

Washington

◆ THE JAPANESE ship, Miye Maru, sailed from Tacoma, April 27, for Hongkong with a 600-ton cargo including wood pulp and lumber.

◆ Technologist Ships Hemlock Bark for Tests

C. C. Smoot, technologist for the U. S. Bureau of Chemistry and Soils at Grays Harbor, spent some time at Aberdeen recently arranging a 20-ton shipment of properly cured waste hemlock bark, to go by rail to the extract plant at Arcata, in northern California. Smoot believes that the waste hemlock bark in the Pacific Northwest can be converted into a new source of wealth in both liquid and solid hemlock bark extracts.

After tests are made at Arcata, the bark will be shipped east to be tested and processed by several methods to gain powdered extract.

◆ THE $3,000,000 kraft mill of the Longview Fiber Co. has completed installation of additional machinery and floor space recently. The main building of the mill is now 1,000 feet long by 90 to 180 feet wide. R. S. Wertheimer is resident manager of the plant which makes wrapping paper, bags, etc.

◆ THE GRAYS HARBOR Pulp & Paper plant at Hoquiam, a 150-ton plant converting its pulp into fine grades of paper, has plans for expanding paper operations in the near future to utilize its entire output of pulp.

◆ G. ELMER EMIGH of Camas, Wash., has arrived in Carthage and has assumed his duties as superintendent of the National Paper Products Co. mill there. He succeeds Napoleon Rigabar, resigned, who was employed as head of the plant for 14 years. Mr. Emigh has been connected with the Crown-Zellerbach interests for some years.

◆ A MEETING of lumbermen and chamber officials has been called for May 6 at Hoquiam by Clark V. Savidge, state land commissioner, in an effort to devise some method of combatting the hemlock looper, forest parasite, which has been so active in destroying acres of hemlock timber in this county. The parasite, particularly active in the North river district, appeared first in Pacific county. It is proposed to dust the forest by airplane if state appropriation can be obtained.

Oregon

◆ FIRE which swept through the plant of the Pacific Pulp Paper Materials Co., Portland, April 26, destroyed about 500,000 pounds of waste paper. The paper was being unloaded here prior to being shipped to the Pacific Strawpaper & Board Co., Longview, for the manufacture of cardboard, the Portland plant being a subsidiary of the Longview firm.

◆ Seek Appropriation for Dam on Columbia River

Efforts to obtain funds for a thorough survey of the Warrendale dam site in the Columbia river will be made by the Oregon delegation in Congress at the request of the executive committee of the Portland Chamber of Commerce and the Columbia Valley association so that United States engineers may make certain whether the Columbia river below Cascade rapids would be suitable for a dam site.

Allotments for river and harbor improvements from Oregon, Washington and California now include: Willapa river, harbor development, Washington, $35,000; Yaquina bay harbor, Oregon, $20,000; Humboldt bay harbor, California, $2,500; Noyo river, California, $10,000 and Sacramento river, $29,098.

◆ IRA DOWD who recently purchased stock in the Scott-Hosfeldt Co., Portland jobbers, has been appointed manager of the paper specialty department. Mr. Dowd who has not been in the paper business lately was local representative for the Graham Paper Co., until two years ago. He is now vice-president of Scott-Hosfeldt Co.

California

◆ Pelican Paper Co. Says Business Is Better

Establishment of a five-day week at the Pelican Paper Co., San Francisco, has been announced by Rodman C. Pell, Jr., president of the organization. The plan calls for rotation, half of the employees receiving the day off Saturday, May 7, the remainder the following Saturday.

Two pay increases in the past year, one last May and the second in January, bear out Mr. Pell's statement that "business is better, at least with us."

◆ Mielke Appointed General Manager by B. M. & T.

Otto W. Mielke, formerly manager as well as president of the northern division of Blake, Moffit & Towne, arrived in San Francisco the first of May to

become general manager of the new centralized headquarters for the 17 branches of the company. He retains the presidency of the northern division with C. L. Shorno, vice president, his successor as manager in that section.

Mr. Mielke has been with Blake, Moffit & Towne since 1899 when the firm was Blake, McFall Co. and in 1926 became president of the northern division.

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◆ THE FALL MEETING of the Technical Association of the Pulp and Paper Industry is to be held at Holyoke, Mass., in the third week of September, 1932. This was decided at a meeting of the executive committee a few weeks ago. This will be the second time that the association has held its fall meeting in Holyoke, the first occasion being in 1917.

◆ President Willson Appeals for Support of the A. P. & P. A.

In an article published in the latest issue of the *Weekly Business Review* of the American Paper and Pulp Association, President S. L. Willson makes a strong plea for continued moral and financial support of the association on the part of the industry in membership. The text of the article is interesting when taken in connection with the various economies put into effect recently, including the dropping of the *Weekly Review* and abolishing the office of general manager. Its text follows:

Industry today must practice economy. This principle has been applied to the affairs of your association. Expenses have been reduced 50 per cent, and to a point where further curtailment will result in sacrifice of service to an extent that will make the association of minimum value to the industry.

We are anxious to have your continued moral and financial support. This anxiety is based upon the belief that the Paper Industry needs an association. Failure to give it support at this time when it is so badly in need of it, may, in the end, be more costly than the amount that could be saved through resignation.

It is difficult to determine exact benefits derived from membership as many of them are intangible, yet they actually exist. Possibly no direct benefits to your individual company can be traced, but indirectly through the benefits to the entire industry, you are receiving them to an extent far beyond the cost of your dues.

Depressions are periods when association co-operation is valuable. Without a representative membership an association becomes ineffective and costly. There have recently been a number of resignations with the idea of saving the cost of membership dues. It has been carried to such an extent that it has been necessary to provide outside funds for continuing the work of the association. There are certain financial obligations to be met, which, today are beyond the income received, even though economies above referred to have been effected. The officers of the association have been compelled to provide these funds, which is a burden that ought not to exist in an association representing such an important industry. Those who have withdrawn their support have thoughtlessly contributed to the disintegration of our association.

I know these are trying times for all of us, but this year—of all years—we need you with us, and feel justified in asking your help in maintaining the organization through membership support.

◆ Association Drops Weekly Review

With the April 27 issue, the *Weekly Business Review* of the American Paper and Pulp Association has suspended publication. In a notice to members, Charles W. Boyce, executive secretary, made the statement that the Review has been published by the association since 1927 and for the past four years has been edited by John A. C. Kavanagh. The number of publications and volume of material issued from the secretary's office have increased so greatly during recent years that it was found necessary to reduce and consolidate this material into a single publication.

In the future a monthly bulletin will be published combining the type of material which formerly appeared in the Weekly Business Review, Pulpwood, Pulp and Paper Profits, Wastes or Profits, and the other miscellaneous publications of the association.

◆ Approved Pulp Testing Chemists

The Joint Committee on Approved Chemists of the American Paper and Pulp Association, the Association of American Woodpulp Importers, and the Technical Association of the Pulp and Paper Industry, has issued a new list of chemists who have been accepted as competent for the weighing, sampling and testing of wood pulp for moisture. The list is divided into pulp and paper chemists employed in mills and in institutions, and commercial chemists. The names and address of the chemists listed are as follows:

Pulp and Paper Mill Chemists

Allen Abrams, Marathon Paper Mills Co., Rothschild, Wis.; Henning J. Arbo, B. C. Pulp and Paper Co., Ltd., Vancouver, B. C., Canada; Leslie K. Beckell, British Columbia Pulp & Paper Co., Port Alice, B. C.; Canada; Harry C. Bradford, Rex Paper Co., Kalamazoo, Mich.; Wm. E. Breitenbach, Grays Harbor Pulp & Paper Co., Hoquiam, Washington; John B. Calkin, Massachusetts Institute of Technology, Cambridge, Mass.; Harvey P. Cannon, Container Corp. of America, Philadelphia Division, Manayunk, Pa.; N. W. Coster, Puget Sound Pulp & Timber Co., Everett, Washington; Edgar Desgagne D. Durand, Consolidated Paper Corp., P. O. Box 45, Port Alfred, Quebec, Canada; G. P. Genberg, Fraser Companies, Ltd., Edmundston, New Brunswick; Fritz Grunwald, Consolidated Paper Co., Monroe, Mich.; H. H. Harrison, Crystal Tissue Co., Middletown, Ohio; E. S. Hinman, P. H. Glatfelter Co., Spring Grove, Pa.; J. Fenton Hogan, National Paper Products Co., Carthage, N. Y.; Arthur P. Hunnemann, Jr., Container Corp. of America, 111 West Washington St., Chicago, Ill.; C. J. Johnson, The Upson Co., Lockport, N. Y.; W. K. Kidder, Allied Paper Mills, Kalamazoo, Mich.; H. C. Koch, Auglaize Box Board Co., St. Marys, Ohio; Frank D. Libby, Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.; L. E. Longstreth, Container Corp. of America, 404 E. North Water Street, Chicago, Ill.; Elbert G. Milham, Watervliet Paper Co., Watervliet, Mich.; Wesley M. Osborne, Puget Sound Pulp & Timber Co., Anacortes, Wash.; Clifford Patch, Eastern Manufacturing Co., Bangor, Maine; Hyman L. Rammer, Fibreboard Products, Inc., Stockton, Calif.; Lawrence Taylor Ross, Union Bag & Paper Corp., Hudson Falls, N. Y.; B. K. Steadman, Standard Paper Manufacturing Co., Richmond, Va.; R. H. Stevens, Bogalusa Paper Co., Inc., Bogalusa, La.; Dan M. Wadsworth, P. O. Box 704, Bogalusa, La.; Sidney D. Wells, Nekoosa-Edwards Paper Co., Port Edwards, Wis.; E. F. Whittington, Sutherland Paper Co., Kalamazoo, Mich.

Commercial Pulp Testing Chemists

A. B. Andrews, Box 67, Lewiston, Maine; Prof. Paul DeCosta Bray, University of Maine, Orono, Maine; F. C. Broeman, F. C. Broeman & Co., Broeman Bldg., Cincinnati, Ohio; Roy Cross, 700 Baltimore Ave., Kansas City, Mo.; J. T. Donald & Co., Ltd., 40-42 Belmont St., Montreal, Canada; Hamlin & Morrison, 216 South Second St., Philadelphia, Pa.; Abbot A. Hanks, Inc., 624 Sacramento St., San Francisco, Calif.; Milton Hersey Co., 980 St. Antoine St., Montreal, Canada; Industrial Laboratories, Ltd., 71-73 Richmond St., West Toronto, Ont.; Emil F. Johnson, 133 Front St., New York; K. Hv. Knudsen, 104 John St., New York; F. W. Liepsner Laboratory, 309 Camp St., New Orleans, La.; Arthur D. Little, Inc., 30 Charles River Road, Cambridge, Mass.; Arthur R. Maas Chemical Laboratories, 308 E. Eighth St., Los Angeles, Calif.; George W. Miles, 88 Broad St., Boston, Mass.; New England Laboratories, 44 Chestnut St., Springfield, Mass.; Northwest Testing Laboratories, 208 James St., Seattle, Wash.; Orthmann Laboratories, Inc., 647 W. Virginia St., Milwaukee, Wis.; Raymond G. Osborne Testing Laboratories, Rive-Strong Bldg., Los Angeles, Calif.; Felix Paquin, 305½ 22d St., Galveston, Texas; Perry Testing Laboratory, 201 Third St., Detroit, Mich.; Everett J. Schwantes, 431 S. Dearborn St., Chicago, Ill.; Skinner & Sherman, Inc., 246 Stuart St., Boston, Mass.; Stillwell & Gladding, Inc., 80 West Street, New York; Harold E. Tiffany, 321 Delaware Ave., Wilmington, Del.; U. S. Testing Co., Inc., 316 Hudson St., New York; Wiley & Co., Inc., Calvert and Read Sts., Baltimore, Md.; F. M. Williams, 600 Trust Company Bldg., Watertown, N. Y.

+ CANADIAN NEWS +

◆ Canadian and Newfoundland Mills Consolidate

Canadian International Paper Co. becomes the world's largest producer of newsprint, controlling a daily capacity of 2,800 tons of newsprint, following its acquisition, last month, of the New Brunswick International Paper Co. and International Power and Paper Co. of Newfoundland. This transaction, it is stated, represents a further step in the program of International Paper and Power Co. for grouping its properties for maximum efficiency in operation and control. The whole of the present transaction is being accomplished through exchange of securities, and will involve no new financing. The entire capital stock of the New Brunswick Co. has been acquired from the International Paper Co., and all of the common stock of the Newfoundland company from International Paper and Power Co. The combined assets of the three companies total over $180,000,000.

Canadian International's two mills are located at Gatineau and Three-Rivers, Quebec, and the two mills of its subsidiaries are located at Dalhousie, N. B., and Corner Brook, Nfd. These properties are considered to be among the most efficient producers in the newsprint industry, with an average cost of production generally believed to be lower than that of any other group of mills under unified control in North America. Due to their position as members of the International Paper Group, these mills have been able to maintain a relatively high rate of production during the recent period of declining consumption, because of International Paper's policy of curtailing newsprint operations at its mills in the United States, where operating costs are higher than in Canada and Newfoundland.

Financial statements for 1931 are not yet available, but it is understood that the earnings of Canadian International Paper and of the newly-acquired subsidiaries covered interest charges on all of their outstanding bonds by substantial margins. The relatively favorable showing of these properties is, in a large part, the result of progressive increases in operating efficiency, attained by the management at all four mills. Average production per operating day in each mill has been substantially increased from year to year, and this, combined with operating economies and efficiency, has produced corresponding reductions in operating costs.

◆ Maine Group Asks Timber Rights

Authority for ratification of an agreement between Portland, Me., interests and the Newfoundland Government, providing for extensive pulp, paper and electrification schemes in Bay St. George, was sought in a bill presented last month before the House of Assembly. The agreements would give Alfred A. Montgomery, understood to be treasurer of a Portland savings bank, and Edgar Irish, Maine lumberman, two years in which to select sites for factories, plants, railways, roads and transmission lines, and twelve months in which to select an area of 1,500 square miles of timberland in Labrador.

Montgomery and Irish, in turn, undertake to establish a pulp and paper mill with a daily output of 500 tons. For 15 years they would have the right to export rossed wood, paying thereon a royalty of 25 cents a cord, and would pay 25 cents per horsepower developed, operating for five years. Plants would commence operation within six years, and products exported would not be subject to any tax. Properties would be exempt from municipal or other taxes, and bonds, debentures and other securities would be exempt from taxation under an agreement to last 50 years.

The principals proposed to take over about 1,100 square miles of timberlands owned by various holders. Bay St. George is an inlet on the southwest coast. Its head is about 50 miles south of Corner Brook, site of International Paper's mill.

◆ CANADA continues to be the largest supplier of pulp to the Japanese market, and imports from the Dominion in 1931 increased by almost 6,000 tons over those of the previous year, although the value decreased.

◆ THIS YEAR'S scholarship awards of the National Research Council number 22, of a total value of $16,150. Among the successful candidates are E. G. Hallonquist, of New Westminster, who holds a $1,000 fellowship, and H. Berden Marshall, also of New Westminster, who holds a $750 studentship. Both these men will be working during the next academic year in the Department of Industrial and Cellulose Chemistry of McGill University, Montreal.

◆ CANADA NOW manufactures over 35 per cent of the world's supply of newsprint, exceeding in 1930 the production of the United States, its nearest competitor, by over 1,200,000 tons. Preliminary figures for 1931 show a lead of over 1,000,000. Canada's exports of this commodity are over eight times as great as those of Newfoundland, next in importance, and exceed the exports of the rest of the world combined.

◆ Pulp and Paper Exports

Newsprint production by Canadian mills for the month of March showed an increase over February, but a decline as compared with March of last year, the figures being 166,758 tons for March 1932; 158,543 tons for February 1932, and 187,005 tons for March 1931. Shipments in recent months have been running below current output, and stocks of newsprint in Canadian mills on April 1, 1932, were 63,548 tons as against only 39,850 tons on April 1, 1931.

Canadian exports of pulp and paper in March showed a decided expansion over February, but fell considerably below March of last year. For the month, exports of newsprint, etc., totalled $8,520,812 against $7,191,649 in February, and $11,639,039 in March of last year. Pulp exports were valued at $2,248,470 against $1,746,717 and $3,267,236 on the same comparison, making a total pulp and paper export for the month of $10,769,282, against $8,938,366 in February and $14,906,275 in March of 1931. The United States continued by far the Dominion's best customer, taking $8,963,460, against by $395,538 by the United Kingdom, and $1,410,284 by others.

QUEBEC

◆ Impending Merger Reported

Reports are current that the near future may see the amalgamation of two of the larger newsprint companies, Consolidated Paper Corp. and St. Lawrence Paper Corp. These two organizations are both parties to the negotiations for a general merger of newsprint companies in Canada, and it is thought that their amalgamation would clear the way for the consummation of the larger plan. The merger, it is pointed out, would be a logical one, as the properties of the companies are located in the same parts of the country, thus permitting concentration of operations, a step which is of paramount importance under existing conditions in the newsprint industry.

Meanwhile, the efforts of the committee which has for some time past been working on a plan for a general merger have, it is understood, been productive of beneficial results, a mass of worth-while information bearing on the many problems of production and distribution faced by the newsprint operators having been compiled. Even if, as seems likely, the comprehensive merger, towards the consummation of which the work of the committee is directed, cannot be worked out for some considerable time because of the varied interests and divergent capital structures of the companies involved, the information already obtained will prove of very material value to the newsprint companies in their problems of production distribution.

◆ SOME SLIGHT IMPROVEMENT is shown in the 1931 financial statement of Quebec Pulp and Paper Corp., as the year resulted in a net revenue of $36,216, against a loss of $44,292 in 1930. After deduction of general expenses there was an operating profit of $7,704, against an operating loss of $78,572 in 1930. After deduction of miscellaneous charges, in-

cluding fixed charges and expenses of non-operating plants, the consolidated net loss on the year was $201,646, a reduction of $62,359 from the loss sustained in 1930. The company's mill remained closed during the year, so that no provision has been made for depreciation. The main source of revenue is now the company's investment of $704,000 in Dominion of Canada bonds.

◆ THE DIVIDEND on the cumulative redeemable 6½ per cent preferred stock of Price Bros., payable April 1, was passed by the company. Price Bros. was the last important paper company in Canada to discontinue payment on the common dividends. In the fiscal year ended February 28, 1931, it earned $20.65 on each of the 65,976 shares outstanding at that time. The initial dividend on this preferred issue was paid on April 1, 1925.

◆ FOR THE FISCAL YEAR ended December 31, 1931, Howard Smith Paper Mills reports net profits from operations, together with income from investments and special revenue, of $1,101,716, as compared with $1,231,760 for the preceding year. After liberal provision for depreciation and other charges, including U. S. exchange on bond interest, and provision for income tax on subsidiaries, the balance available for bond interest remained at $623,282, as compared with the actual disbursement of $60,919 on this account. The net profits before providing for income tax stood at $62,362, equivalent to $1.38 per share on the 45,000 shares of preferred outstanding. This compares with $440,706 earned in 1930, or $9.79 per share on the preferred.

◆ St. Lawrence and Subsidiaries Hold Annual Meetings

At the annual meeting of the St. Lawrence Corporation, held in Montreal on April 28, Ernest Rossiter, president of the company, stated that although there seemed to be some improvement in the newsprint industry in April, the first quarter of the current year was the worst the company had experienced.

The annual meeting of the various subsidiary units of St. Lawrence Corp., Lake St. John Power and Paper Co., Brompton Pulp and Paper Co. and St. Lawrence Paper Mills Co., were also held the same day. Arthur Campbell was elected to the board of the St. Lawrence Paper Mills following a vacancy on that directorate. H. A. Clarke, of Toronto, a former director of St. Lawrence Corp., did not desire re-election and his vacancy was filled by the election of W. Wynne Robinson, Montreal manager of National Trust Co. Other members of the parent company and subsidiary directorates were re-elected.

Mr. Rossiter, speaking at the meeting of the parent company shareholders, said rigid economies were being effected as time went on. Men, he added, were doing more work than they had for years, and seemed to like it. The St. Lawrence Corp. is not giving up tonnage under the Newsprint Institute agreement since the first of the year, and only tonnage was being given up within the group. Pending settlement of the Price Bros. suit, nothing was being done with regard to tonnage allotments.

The financial statement of St. Lawrence Corp. and constituent companies shows a sharp contraction in earnings, in keeping with the continued depression in the newsprint industry. The company has succeeded in maintaining a good liquid position, however, reporting its working capital at the end of the 1931 period at the high figure of $5,913,283, a very small decline from the $5,990,419 reported a year previously. Included with the St. Lawrence Corp. report are reports covering the operations and giving the balance sheets of the various constituent companies.

◆ First Report of Maclaren Power & Paper

Consolidated profits from operations of $746,273 are shown in the first annual report of Maclaren Power and Paper Co., Ltd., for the period ended November 30, 1931. The report covers the operations of the wholly owned subsidiary companies, the James Maclaren Co., for the 12 months ended November 30, and the Maclaren Quebec Power Co. since it commenced business in 1931. After deduction from net profits of depreciation, depletion and other reserves amounting to $178,684 and the deduction of $458,333 for bond interest of Maclaren Quebec Power Co. (the balance of interest on first mortgage bonds amounting to $74,933 having been capitalized as interest during construction) there remained $109,255, which, added to consolidated earned surplus as at November 30, 1930, increased that amount to $783,723, from which a dividend of $175,000 was paid on the common stock of Maclaren Power and Paper Co. during the year, leaving a balance carried forward in consolidated earned surplus amounting to $608,723.

In spite of the difficult operating conditions during the past year in the newsprint industry and the additional problems which inevitably attend the first year of operation of a new mill, the James Maclaren Co. showed a satisfactory profit. The president stated that operating costs compared favorably with the best units in the newsprint industry. Excellent progress is being made in the construction work on the Masson power plant, which will have an aggregate capacity of 130,000 horse-power and which will bring the total development of the company's plants (on completion of the remaining unit at High Falls) up to 245,000 horse-power. No construction difficulties have been encountered, conditions have proved favorable, and it is stated that there is no doubt that the company will be able to meet all its obligation in respect to the delivery of power to the Ontario Hydro-Electric Power Commission on July 1, 1933 and subsequent dates. The company's construction costs to date are within the original estimates.

◆ Alexander Murray to Market Donnacona Board

An agreement has been reached by the Donnacona Paper Co. and Alexander Murray and Co., Ltd., whereby the latter will take over the marketing of Donnacona insulating board products for the entire Dominion of Canada. The mill for the manufacture of these products was completed early in 1930 under the direction of the engineering staff of Price Bros., which controls Donnacona Paper. Upon completion of the mill, Price Bros. Sales Corp. undertook marketing of the output, which is reported to have met a generally good reception. Donnacona Paper will now concentrate on manufacturing, leaving all merchandising, distributing, etc., to the Alexander Murray Co.

The latter is one of the group of companies controlled by Dominion Tar and Chemical Co. Manufacturing and distributing a diversified line of building materials through offices and warehouses located in important centers throughout the Dominion, they are in a good position for the merchandising of Donnacona insulating products.

◆ AT A MEETING of the board of directors of Dominion Engineering Co., held in Montreal last month, L. J. Belnap, president of Consolidated Paper Corp., was elected to the directorate, filling an existing vacancy.

◆ AT THE ANNUAL meeting of shareholders of Howard Smith Paper Mills, held in Montreal on April 18, Hon. Charles A. Dunning was appointed to the board of directors. The meeting was largely routine, with reports adopted unanimously.

◆ CONSTRUCTION of an $8,000 warehouse is under way at the plant of Anglo-Canadian Pulp and Paper Mills at Quebec City. It is 100 feet square and one story high, with concrete foundation, frame superstructure, faced with sheet metal, hot water heating, etc.

◆ DUE PARTLY to the large reduction in sales of excess and secondary power to the paper companies, the Shawinigan Water and Power Co. has reduced the dividend rate on its common stock from $2 to $1 per annum.

◆ PREMIER TACHEREAU was visited recently by a delegation from Chicoutimi asking the Government's assistance in restarting the pulp mills at that place. On the strength of this, a report was circulated that arrangements were being made to start up the mills. The old Chicoutimi Pulp Co. has been idle for some time, and the property, now known as the Quebec Pulp and Paper Mills, belongs to the Consolidated Paper Corp. and Price Bros. jointly. It is understood that neither of these parties was consulted by the leaders of the delegation before they went to Quebec. At the height of activity of these mills, which were the largest producers of groundwood in the world, the product

was shipped mostly to England. With the exceedingly low prices now being paid in England for Scandinavian groundwood, it is quite a question as to whether a market could be found, even if other circumstances made it advisable to restart the mills.

◆ W. G. Cuttle, formerly resident engineer for Ste. Anne Paper Co., a division of Abitibi, is now production manager of the Cellophane Division of Canadian Industries, Shawinigan Falls, Que.

ONTARIO

◆ Great Lakes Operating at a Profit

Great Lakes Paper Co. has shown an operating profit, before provision for bond interest and depreciation, since July 13, 1931, when it was placed in the hands of the National Trust Co. as receiver and manager. This operating result is subject to adjustment with the Minnesota and Ontario Paper Co. with respect to proprietary ownership of tonnage, and commission to be allowed to the receivers of Minnesota and Ontario. Adjustment, it is understood, may be favorable to the bondholders. The latter has been advised by its protective committee that there has been no marked change in the operation of the company and that the granting of a receiving order in bankruptcy and the appointment of a custodian in no way prejudices the holders of the first mortgage bonds.

The appointment of a custodian or liquidator does not affect the possession and operation of the property covered by the bond mortgage, and the National Trust Co. as receiver and manager will continue to manage the property in the interests of the bondholders. The company is now operating at approximately 35 per cent of capacity on tonnage allocated by Minnesota and Ontario Paper Co. under an agreement which continues until July 19, 1932.

◆ ONTARIO POWER Service Corp.'s $23,000,000 project at Abitibi Canyon, seventy miles north of Cochrane, is reported by officials of Abitibi Power and Paper Co., parent company, to be well up to schedule. In order to deliver 85,000 hp. as per contract to the Hydro-Electric Power Commission at Hunta for transmission to Sudbury on October 1, the first two generators will have to be in operation. The installation calls for five 66,000 hp. vertical turbines, with generators of 48,500 kv.-a. capacity. Power will be carried at 132,000 volts on two steel tower lines from the dam to Hunta, on the Canadian National Railway line, ten miles west of Cochrane and sixty miles southwest of the dam. The Commission then takes the current 190 miles south to Sudbury.

◆ JOHN T. HAIG, Conservative member for Winnipeg in the Manitoba Legislature, recently charged pressure from the Ontario Government had led to the closing down of the Pine Falls mill of Manitoba Pulp and Paper Co., a division of Abitibi Power and Paper Co. In denying the allegation, Hon. William Finlayson, Minister of Lands and Forests in the Ontario cabinet, stated that the company had four mills in Ontario which were closed down. As the Government could not force the company to run its Ontario mills, he did not see how it could help the Manitoba mill, and added: "The newsprint paper has gone to pot. Consumption has fallen away and there is not enough work to keep the mills operating. We would like very much to be able to have the company keep operating, but have no power to control them to do so."

◆ AS A RESULT of a spectacular blaze which raged for more than twelve hours, more than 8,000 cords of pulpwood at the Campbellford mill of Canadian Paperboard Co. were destroyed last month.

◆ CANADA SAND PAPERS, LTD., Prescott, recently organized to manufacture sand paper, abrasive papers and materials, have taken property there with about 25,000 square feet of floor space, and will occupy at once for a new plant. Equipment will provide for a large output. E. F. Stark, formerly connected with Abrasives, Ltd., Brantford, is manager of the new company. S. B. Grimes and W. M. Grimes will be in charge of the plant.

◆ ALLIANCE Paper Mills, Ltd., won the first-aid trophy put up for competition by the Ontario Pulp and Paper Makers' Safety Association, and the presentation of the trophy and individual medals to members of the team was made at the meeting of the Association held at the King Edward Hotel, Toronto, on April 7th. The runners-up were the team trained by the Howard Smith Paper Mills, Cornwall Division, and individual medals were presented to each member of that team also at the same time.

◆ H. BRUCE McADAM has severed his connection with the Spruce Falls Poper and Paper Co., for whom he had worked since the construction period, to join the forces of the Ontario Paper Co. as groundwood engineer at Thorold.

◆ THE SCOTT PAPER CO. of Canada, Ltd., of Brittain St., Toronto, Canadian subsidiary of the Scott Paper Co., has discontinued operations. The company, however, is still maintaining Canadian representation.

BRITISH COLUMBIA

◆ THE ANNUAL REPORT of British Columbia Pulp and Paper Co. for the year ended December 31, 1931, shows that operating profits were $363,446, which compares with $671,903 in 1930. The reduction in earnings is in line with adverse conditions in the pulp and paper export markets. After deduction of bond interest charges, provision for depreciation of properties and investments, income tax and payment of a half-year's preferred dividend, a loss of $200,788 is indicated. The balance sheet shows maintenance of liquid position, with current assets in the proportion of 5.3 to 1. Net working capital of $1,002,033 compares with $1,289,080.

◆ FRANK L. BUCKLEY, who for many years has been interested in logging and saw mill operations in Northern British Columbia, stated recently that certain associates had authorized him to announce their decision to organize with a view to building a high-grade bleached sulphite mill at Prince Rupert, to compete with the Swedish product. The mill is to have a capacity of 200 tons per day. Mr. Buckley said his supporters were from New York, Minneapolis and New Orleans. He added that a site had already been selected at Seal Cove, that construction would probably be under way within six months, so that production should be expected in eighteen months, if not sooner.

◆ DEMAND from the domestic market is stated to be keeping the plant of the Westminster Paper Co., New Westminster, working on full time, though export business is quiet. In the past, the company has experienced a period of two or three weeks of slack time at this period of the year, but with the exception of three days curtailment on account of mechanical trouble, the plant has been operating at capacity without a shut-down.

◆ Bathurst Reports Difficult Period

Continued unsatisfactory conditions in the newsprint industry are reflected in the financial statement of Bathurst Power and Paper Co. covering the 1931 fiscal year, which was published last month. An operating loss of $86,460 is shown on the year, and after a write-off of $115,105, idle expenses, bad debts, etc., the net loss on the year is $201,565. The company closed its fiscal year with an excellent financial position maintained, current assets standing at $2,199,719, exceeding current liabilities in a ratio of 22 to 1, and with net working capital at the substantial figure of $2,103,486. The company has neither funded indebtedness nor bank loans.

At the annual general meeting of the company General J. B. White was elected to the presidency, succeeding A. J. Nesbitt, who resigned from this office and also from the directorate. Other officers elected were: L. R. Wilson, vice-president; A. E. McLean, vice-president and general manager; H. J. Webb, treasurer; G. A. Schryer, assistant treasurer; S. B. Bond, secretary, and S. Morse, comptroller. The following were elected directors: General J. B. White, George McKee, Ernest Rossiter, H. J. Webb, P. A. Thomson, James B. Woodyatt and L. R. Wilson.

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NEW ENGLAND

◆ Organization of Huntington Paper Company

The organization of the new Huntington Paper Company, Huntington, Mass., disclosed the fact that several nationally known papermakers are identified with the new corporation, also that it will be closely identified with the Hurlbut Paper Co., South Lee, Mass.

The principal organizer of the new company is Ralph M. Snell of Agawam, Mass., who has been connected with the Paper Makers Chemical Co., Holyoke, Mass., since 1906, having been vice president in charge of eastern and foreign plants until his voluntary retirement from that company last year. Mr. Snell has had extensive papermaking experience which he will bring to the Huntington Paper Co. as president, also to the Hurlbut Paper Company, of which he has been made vice president and technical director. He has served with the Indiana Paper Co., the Worthy Paper Co., Chemical Paper Co., was superintendent of the Niagara Paper Co., Lockport, N. Y., and one of the incorporators of the Upson Company of Lockport.

Other officers are: vice president, Frank A. Juckett, president of Hurlbut Paper Co.; secretary, Charles N. Derrick, director of Hurlbut Paper Co.; treasurer, W. H. Upson, treasurer of the Upson Company. Directors of Huntington, besides the officers mentioned, include such leaders of the industry as George Rodney Wallace, president of the Fitchburg Paper Co., Fitchburg, Mass., and Charles A. Upson, president of the Upson Company.

Mr. Snell took over the title to the old American Writing Paper Co. Chester Division at Huntington from Choral Properties, Inc., which is an A. W. P. subsidiary, and has deeded this to the new company. While plans have not been announced, it is understood that the Huntington mill is in good condition and will be ready for the production of fine papers when the directors consider the time right.

◆ THE UNITED TEX Paper Company, Peabody, Mass., is a new corporation incorporated according to its charter for the purpose of exporting, importing, manufacturing, and dealing in paper, particularly transfer paper. The capitalization is $100,000. Charles H. White of Peabody is treasurer and clerk, Jacob Kaplan of Boston, president.

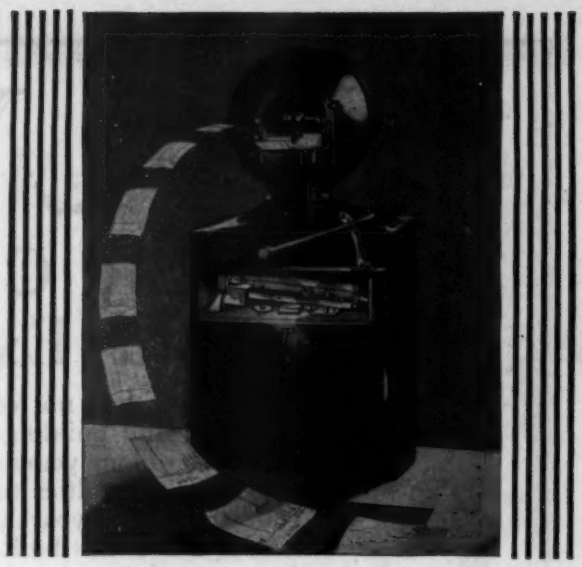
◆ New England Council Visits Massachusetts Tech.

The New England Council on May 3rd and 4th sponsored two days of conference in Boston and Cambridge to which all New England manufacturers were invited. On the first day the visitors gathered at the Massachusetts Institute of Technology where they were escorted through that great institution's laboratories to see the work which has been going on in the Institute's Department of Industrial Cooperation and Research. The Institute is planning an extension and revision of this work to make it of still greater value. Studies in research of wide interest included fuel combustion, hydraulics, heat insulation, control of high speed operations with the use of the mercury strobscope as an aid to observing high speed mechanical action in cutting and finishing paper, etc., color matching, and other important developments in electrical and mechanical research.

The second day of the conference was given over to new products. It was held at the Copley Plaza Hotel, Boston, and an exhibit was shown with addresses describing new products developed in the past year by which various New England industries planned to offset depression.

◆ COL. B. A. FRANKLIN, who has resigned from Strathmore Paper Co., plans to continue his former vocation of an industrial engineer, it is understood.

◆ NEW ENGLAND Paper & Pulp Traffic Association filed a suspension request with the Interstate Commerce Commission against the proposed rates on paper from Canton, N. C., via Norfolk, Va., and steamer to Boston, New York, Philadelphia and Baltimore. The rates in dispute are 29c to Baltimore, 40c to Boston, 35c to New York and 32c to Philadel-



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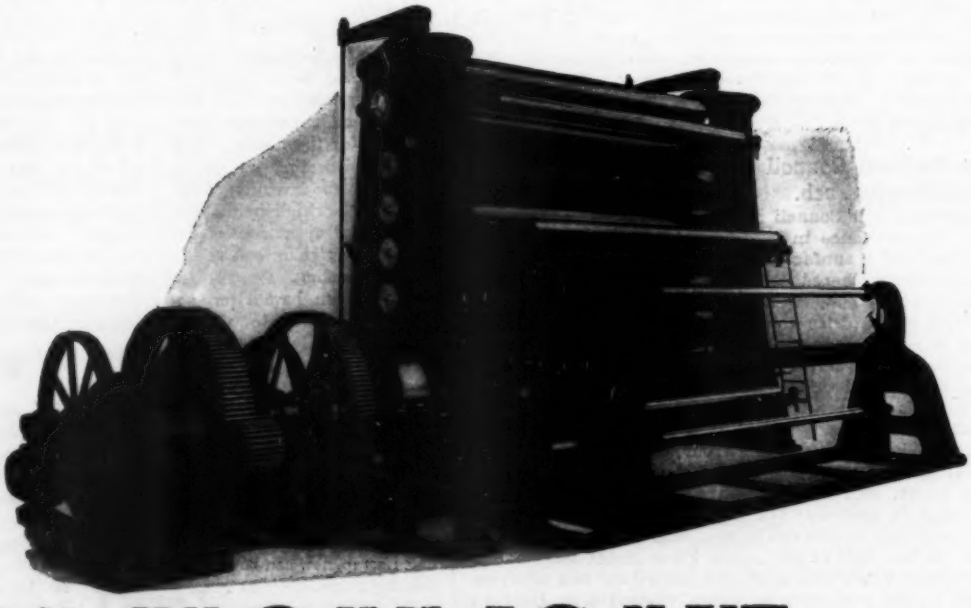

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phia. The request for suspension was not granted and it is not known whether a formal complaint against the rates will now be filed. The protestant makes comparisons between the rates from Canton and the rates from typical New England producing points to the markets named, showing that the Canton rates compared on a percentage of first class are materially lower.

◆ RATES ON WASTE PAPER from New York Harbor Lighterage points to Holyoke, Mass., were reduced 40c per ton to 18.50c per 100 pounds, minimum weight, 20,000 pounds. A cut of 1c per 100 pounds, or 20c per ton has been effected on all newsprint rates from Bangor & Aroostook R. R. and Maine Central R. R. mills to American port cities. This is a move to check the growing transportation by water. Eastern Steamship has maintained a consistent Portland New York paper rate differential.

◆ AN UNEMPLOYMENT DRIVE is being undertaken in Boston through the co-operation of many agencies. Each trade has formed its own committee of volunteers which will solicit jobs among the members of that trade. M. O. Byrne of Whitney Bros., Boston merchants, is chairman for paper and his committee will spend a fortnight of intensive work among mill men and merchants and allied trades here in an effort to get part time work for as many as possible, particularly for repair work, clean up jobs and the like.

◆ SALEM PAPER CO., Salem, Mass., incorporated its business last month with $100,000 authorized capitalization. S. Ablovich is president, and B. Ablovich, treasurer.

◆ NEW ENGLAND paper mills have bought coal for current requirements at lowest prices in 12 years. New Rover nut and slack has sold at 4.35c on cars Boston for highest grade low volatile. Boston prices on pulp are a bit stiffer. Demand for domestic, that is New England pulps, is reported to be better than for foreigns. Recently introduced new non-eating Alpha is said to have made an excellent impression in the trade.

WISCONSIN

◆ Start Work on Kimberly Memorial

Construction work has been started on the new J. A. Kimberly memorial, the administration building of the Institute of Paper Chemistry at Lawrence college, Appleton. The contract has been awarded to the Immel Construction Co., Fond du Lac, for a building of Lannon stone, two stories and basement, measuring 78 by 41 feet. The structure was made possible through a gift of $100,000 by J. C. Kimberly, president of the Neenah Paper Company, whose father, J. A. Kimberly, was one of the founders of the Kimberly-Clark Corp. and one of the earliest students at Lawrence college. Colonial design will be used, with a high pillared porch, and an imposing cupola containing a clock. Offices, reading and recreation, and library work rooms, laboratories and photographic rooms will be housed in this building. They were crowded out of the main building erected for the institute a year ago when complete paper and pulp making equipment on a miniature scale was installed there. Orbison & Orbison, Appleton, have been retained as supervising engineers for Chester H. Walcott, Chicago architect who designed the building. Dedication is to take place when the college opens next fall.

◆ Reforestation Insures Future Supply of Pulpwood

While it is a long look ahead to the day when Wisconsin will again be the major source of the pulpwood supply for paper mills of the State, yet the most recent developments indicate that the manufacturers have that very eventuality in mind.

Two mills that are already under way in growing their own timber supply for the future are making plans for marked expansion this year. These are the Nekoosa-Edwards Paper Co., of Nekoosa, and the Consolidated Water Power & Paper Co., Wisconsin Rapids. The United States Government

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PAPER AND PULP MILL CATALOGUE

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also has formulated a twenty-year program involving massive plantings.

Four million trees will be set out by the Nekoosa company, according to F. G. Kilp, chief forester. The plantings will include three million Norway, Scotch, jack and white pine on lands in Wood county, its home location, and a million trees in Ashland county. A start was made in 1926 with 75,000 trees and the total now under cultivation is nearly six million. Fire prevention operations will be conducted simultaneously, with the building of 12 miles of fire lanes, to be added to 43 miles already constructed by removing slash and trees so fires can be confined to small areas. Losses thus far have been confined to 38½ acres burned over in the entire period. About 100 men will be given employment on these projects.

Purchase of 1,840 additional acres of cutover lands in Forest county has been completed by the Consolidated mills, and additional tracts will be acquired as soon as title can be taken on tax delinquent lands acquired by the county. Spruce, balsam and hemlock will be grown. A nursery has been established on lands about one mile from the mill at Biron, and 1,250,000 trees will be ready for field planting next year. Land in Langlade county previously was acquired for the first plantings.

Reports issued by the Wisconsin Conservation Commission show that commercial forests now total 760,894 acres in Wisconsin. The acreage entered since January 1, 1932, is 331,831. Private owners have 300,373 acres and counties 460,521 acres.

◆ FIGURES available for March indicate satisfactory levels of employment in the paper industry throughout Wisconsin, according to Roy Empey, state director of employment. Full-time operating schedules are reported in the majority of mills, and curtailed schedules in others. Very few have had complete shutdowns.

◆ REPORTS that the Northern Paper Mills, Green Bay, contemplated laying off 400 men and curtailing operations were denied in a newspaper interview with W. P. Wagner, president. Rumors even went so far as to indicate a possible receivership, but Mr. Wagner declares interest payments have been met promptly and there is no reason why the company cannot continue to do so. Six-hour shifts have been in effect for some time to keep a larger number of men at work and wages were reduced 10 per cent.

◆ PRODUCTION records were broken in March by the converting unit of the Marathon Paper Mills Co. at Ashland, when 123,000,000 napkins were turned out. Nearly 100 employees have been added since January 1, Ben Metternich, mill manager, declares. The tissue mill has been operated at full capacity daily and Sunday, and has hardly been able to keep up with the converting department to fill orders on hand.

◆ NOW that its tissue machines have been installed after removal from Appleton, and the new fourdrinier machine is ready for operation, the Thilmany Pulp & Paper Co., Kaukauna, has resumed operation of its sulphate mill. Eighteen-hour schedules are being maintained temporarily, with 150 men on six-hour shifts.

◆ F. J. SENSENBRENNER, president, and all other officers of the Kimkerly-Clark Corporation, Neenah, Wis., were re-elected at the annual meeting last month.

◆ MILLS of the Combined Locks Paper Co. at Little Chute will have the benefit of improved waterpower facilities through the construction of a new government dam by C. R. Meyer & Sons Co. Work has been started. The dam is 562 feet long, with nine gates in the 231-foot sluice section, and two spillways, one 221 feet long and the other 109 feet long. An old wooden dam 691 feet long is being removed. The Meyer bid was $55,942.

◆ A FOUR-POINT PROGRAM of lectures, demonstrations, recitations and discussion conferences will be followed in the courses offered mill employees in pulp and papermaking next season, according to plans outlined at a conference of manufacturers at Appleton, recently. The program was presented

"What do you mean 98% efficient?"

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The applications come in through the 33 branches and are carefully inspected locally as well as in Washington. But action is rapid, and one day's operations will take in many of the above avenues of distribution in most sections of the country.

The amounts loaned vary from a few thousand dollars to several millions, and due consideration is given the necessity of each case.

WHAT ARE THE CHANGES IN THE ECONOMIC PICTURE?

THROUGH the Reconstruction Finance Corporation, the enlarged powers of the Federal Reserve System, the campaign against hoarding, and the United Action for Employment, great fundamental changes have developed.

Beginning in the summer of 1931 with the financial crisis in Germany, followed by the suspension of gold payments in England, a tremor of fear went through the entire world. The shock manifested itself in America by enormous gold withdrawals on the part of foreign central banks which had been leaving their money on deposit with us for years. Bank failures increased rapidly in this country as a result of the financial excitement, which encouraged the hoarding of currency and the sale of securities.

This picture is now changed. Money is being returned to circulation. The resources of banks that failed in March are about equalled by the resources of the banks that reopened. People are becoming impatient with anything which is obstructing the return to normal trade and normal living. The dollar is able to buy more in merchandise, services and securities than it has for many years. The *active dollar* is the only dollar that is valuable, and it is now putting its more slothful neighbor to shame.

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(From the Recommendation of the Committee on Unemployment Plans and Suggestions of the President's Organization on Unemployment Relief)

by H. G. Noyes, director of paper mill education for the State Board of Vocational Education and was given unanimous approval. Day and evening classes are to be offered in management, operatives, maintenance, power and technical subjects. The program has been in effect since 1918, with hundreds of men learning the entire subject of pulp and paper-making and preparing themselves for advancement.

◆ INCOME TAXES on profits fixed at $803,410.51 must be paid by the Menasha Printing & Carton Co., growing out of its sale to the Marathon Paper Mills Co., in 1927, according to a ruling of the Wisconsin Tax Commission. The Marathon company gave 9,582 shares of its common stock and $1,000,000 of its first mortgage 5½ per cent bonds, plus $30,030.50 in cash, which it was contended was payment of interest under the terms of the contract and did not represent part of the consideration. The ruling is based on the manner in which the Menasha company reported its income tax returns.

◆ JAMES R. SIMPSON has resigned as superintendent of the Consolidated Water Power & Paper Company's main mill at Wisconsin Rapids, Wis., and will be succeeded by Lyman Beeman. Mr. Simpson was with the Consolidated since 1921, when he was machine room superintendent, and has accepted a similar position with the Champion Coated Paper Co., Hamilton, Ohio. Mr. Beeman engaged with the Consolidated in 1922 with the groundwood division, and more recently was technical director of the four mills of the company.

◆ HISTORY of the Technical Association of the Pulp and Paper Industry was reviewed by Allen Abrams, of the Marathon Paper Mills Co., Rothschild, at the Lake State Section dinner last month at Appleton. About 125 were present. There are 1,400 members in the organization today, he said. P. M. Foster, of the Beloit Iron Works, Beloit, Wis., spoke on "Recent Trends in the Design of Paper Machines and Equipment."

◆ D. H. GREENE has resigned as general manager of the Wisconsin Tissue Mills, Menasha, Wis., after being associated with the company for six years. He has become identified with the Prairie State Paper Mills, Joliet, Ill., wrapping paper manufacturers, and will be active in its reorganization.

◆ FIFTY YEARS of employment with the Kimberly-Clark Corporation by Charles Kranzusch, paper machine expert, was recognized at a meeting of officers of the company and employees of the Kimberly mill recently. He was presented with a gold watch by F. J. Sensenbrenner, president.

◆ SUCCESS OF industrial safety was explained by W. J. Peacock, personnel director of the Northern Paper Mills, Green Bay, Wis., in an address at a dinner of the Menominee club, Menominee, Mich., recently. "Out of twenty-one years of organized safety in industry," he said, "have come these three suggestions or goals: To salvage manhood even when a person is maimed in body; to salvage people whole by eliminating or guarding hazards, and to salvage employees in their attention, their co-operation, these desire to bulk large, and to attract their finer talents. These make the safety move ment increasingly interesting."

◆ The HOBERG Paper & Fibre Company, Green Bay, has recently perfected a new process for borating its line of paper towels and toilet tissue. This process gives these products the protective qualities of boric acid, which, the manufacturer points out, is so gentle that it is prescribed as an eye-wash, although it possesses strong antiseptic powers. The borating process, which is now being applied to all of this company's towels and toilet tissues, was developed only after many months' research, according to a recent announcement. It is designated as "The Evergreen Borated Process."

◆ A. VANDERBERG, formerly superintendent of the Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich., is now superintendent at the plant of Nekoosa-Edwards Paper Co., Nekoosa.

◆ THE FOX RIVER Valley and Lake Shore Safety Conference will be held at Appleton, Saturday, May 20.

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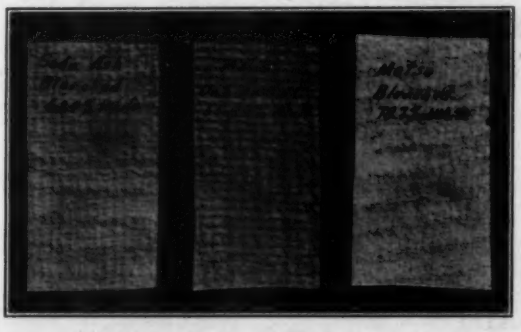

A Chinese proverb says that one picture is worth a thousand words. The details of the experiment illustrated, briefly are these: Air dry pulp from same raw material A. Left hand sample, pulp cooked 7 hours at 190° F. with 10% soda ash and bleached. B. Middle sample, cooked 4 hours at 190° F. with 4½% Metso, no bleach. C. Right hand sample, same as B. except bleached.

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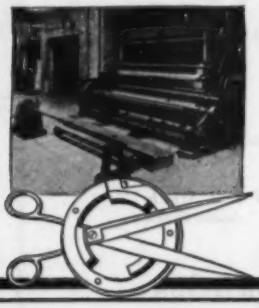

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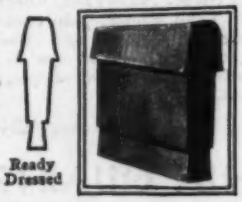

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MICHIGAN

◆ Chief Engineers Study Boiler Construction

At the regular April meeting of the Chief Engineers Club of Kalamazoo, R. R. Kandal, of the Wicks Boiler Co., was the speaker.

Mr. Kendal discussed welding methods in the manufacture of high pressure boilers and also spoke at some length on the methods in use for the detection of weak spots in the weld. Photographs are taken of the completed weld by use of the X-ray and repairs are made before a boiler is shipped.

There was considerable discussion on the machine used for taking the photographs.

The talk was illustrated by lantern slides which aided materially.

◆ Unit Operations Applied to Papermaking

On the evening of April 13 the Kalamazoo Section of Tappi held its monthly meeting at the Columbia Hotel and listened to a discussion of the subject "The Application of Unit Operations in the Paper Mill." D. W. McCready, Instructor in Chemical Engineering at the University of Michigan, was the speaker.

Unit Operations are those operations which, by their general principle, are applicable to several industries. The beating, for instance, will come under the general head of Mixing while sheet formation conforms to the classification of Filtering.

Taking the various operations and applying them to a general classification makes it possible to study these operations with more clarity of thought and probably with less prejudice.

Studies of this kind are being conducted at the University of Michigan with the hope that the results may be definitely applied to the paper industry.

Mr. McCready's paper was very interesting and evoked considerable discussion.

◆ Superintendents and Wives Enjoy Social Evening

On Thursday, April 21, the members of the Michigan Division of the Superintendents Association cast aside formalities and entered wholeheartedly into the occasion of annual ladies' night.

About 150 guests were entertained at dinner which was served in the Crystal Room of the Columbia hotel at seven o'clock, followed by dancing in the Colonial Ball Room of the hotel.

During the dinner, the guests were entertained by Hughie Smith, talented Kalamazoo singer, who gave an interesting and enjoyable program of Scotch songs and stories.

Walter Crawford, chairman of the section, presided at the dinner.

◆ Rubber and Budgets Discussed at Cost & Tech Meeting

On April 28 the Kalamazoo Valley Cost & Technical Association held a very interesting dinner meeting at the Columbia Hotel in Kalamazoo.

Douglas P. Turnbull, auditor of the City of Kalamazoo, spoke on A Budget for a City. Two years ago Kalamazoo built a new City Hall and without the raising of the tax rate. Mr. Turnbull had charge of the budgeting which made this possible.

How the budget should provide, not only for current expenses but for the possibility of unforseen expenditures, was explained in some detail by the speaker.

Mr. J. D. Clark of the Kalamazoo Vegetable Parchment Co. was the second speaker. Before coming to the Parchment Co. Mr. Clark was in the rubber industry and also on the faculty of Syracuse University. The subject for this evening was Rubber and was based on the experiences of the speaker. Mr. Clark went into the collection, treatment, compounding and uses of rubber.

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Keep an eye on your bottom press rolls. The condition of the rubber, the crown and the bearings all exert a direct influence on felt performance and felt life.

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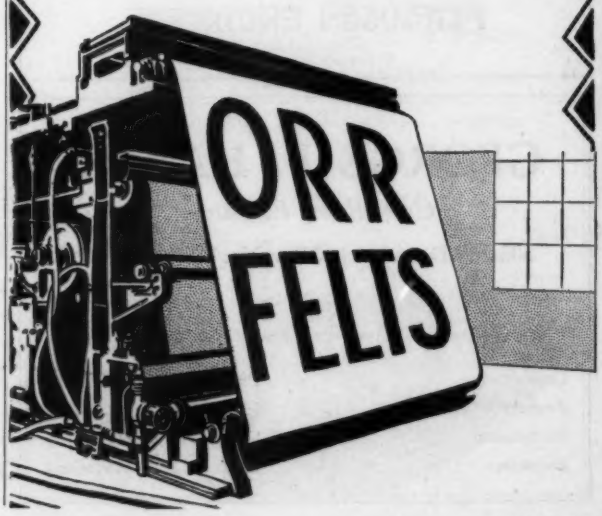

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The meeting was well attended and was presided over by the president, F. D. Libby, of the Kalamazoo Vegetable Parchment Co.

◆ AT THE MEETING of the Chief Engineers Club of Kalamazoo, May 4th, the speaker of the evening was H. E. Winston, of the Byers Pipe Co., who discoursed interestingly on the manufacture of pipe and presented some very good films showing the various processes involved in the production of good pipe.

◆ THE COMMITTEES in charge of plans for the Inter-State meeting of the Cost & Technical Association of Paper Industry, to be held in Kalamazoo, May 20 and 21, are working for as large an attendance at the meeting as possible. They promise that very interesting papers are being prepared and that every effort is being made to assure a profitable and pleasant gathering.

❖ ❖ ❖

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of "The Paper Industry," published monthly at Chicago, Illinois, for April, 1931:

State of Illinois, County of Cook, ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Edward B. Fritz, who, having been duly sworn according to law, deposes and says that he is the publisher of "The Paper Industry" and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Edward B. Fritz, 333 N. Michigan Ave., Chicago, Ill.; Editor, A. Scott Dowd, 333 N. Michigan Ave., Chicago, Ill.; Managing Editor, A. Scott Dowd, 333 N. Michigan Ave., Chicago, Ill.; Business Manager, Edward B. Fritz, 333 N. Michigan Ave., Chicago, Ill.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Edward B. Fritz, 333 N. Michigan Ave., Chicago, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is ..... (This information is required from daily publications only.)

EDWARD B. FRITZ,

(Signature of editor, publisher, business manager, or owner.)

Sworn to and subscribed before me this 21st day of March, 1932.

[SEAL] JANE A. DeWITT.

(My commission expires Aug. 1st, 1932.)

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TECHNICAL DEVELOPMENTS

The following abstracts are of the latest developments found in the foreign press and in the patent offices. Photostats and translations of complete articles and patents can be obtained at cost price.

IN THE PAPER INDUSTRY ■ DOMESTIC AND FOREIGN

◆ Resin in Pulp

The subject is studied from various angles, particularly with respect to the modern process of making sulphite pulp by indirect digestion, and with respect to the great affinity of sulphated paper fillers to resin and resin-fats. A number of interesting conclusions of practical value to the papermaker were reached and some of the more important are as follows. When resin difficulties arise in the papermaking process, the pulp should be used only for the manufacture of papers containing large proportions of fillers. A slight heating of the water used in making up the stock mixture and the addition of steam to the wire in front of the couch roll have proven advantageous. The use of a suction roll as the lower roll of the couch press acts to relieve the resin difficulty. The continuous control of the pH value of the stock-water mixture is important. It must be assumed that a pH zone of optimum effect is present, which can be determined beforehand in an approximate manner, and within the resin-fat emulsion is harmless. The pH zone is 4.5 to 5.5. A pH value of in excess of 6 in the stock-water mixture seldom gives good results. W. Abele. Wochenblatt fuer Papierfabrikation, 1932, 42-4.

◆ Details of the Sulphite Digestion Process

The influence of various conditions of the sulphite digestion process on the chemical and physical constants of the pulp produced is studied. The experiments were carried out in a bronze, lead-lined autoclave which was filled with about three liters of digestion acid and half a kilogram of wood. The contents of the digester were allowed to stand first for one hour and then the temperature was raised to 110 within four hours. The digestion lasted from eight to eleven hours according to the initial conditions. The digestion was carried out with an acid containing 5.5 per cent sulphur dioxide and varying proportions of the base. The average ash content of the pulp was 0.68 per cent and did not change much as the proportion of the digestion base was varied. The resin content (0.83 to 1.26 per cent) of the pulp digested with magnesia-containing liquor was somewhat less than that digested with lime. The alpha-cellulose content (85.5 to 91 per cent) of the pulp digested with lime was somewhat higher than that digested with magnesia. The copper coefficient was higher in the lime-digested pulp than in the magnesia-digested product, and this was also true of the pentosan content. The viscosity and swelling power were alike. Experiments were also made with a slow and a rapid digestion of the pulp. The slow digestion gave a pulp with a somewhat higher alpha-cellulose and lower ash content, but possessing a higher copper number and a lower viscosity than the rapid digestion process. In the discontinuous process of digestion the amount of undigested material was less, the copper number lower and the resin-pentosan and alpha-cellulose contents somewhat higher than in the continuous process. Fotijew and Grabowskij. Bumaschnaja Promischlennost, volume 9, numbers 2 and 3, page 86.

◆ The Bekk Smoothness Tester

Investigations were made on the suitability of the Bekk smoothness tester for determining the smoothness of paper. Fig. 1 shows the details of the machine. The plate that exerts the pressure on the paper is shown at (A). (B) is a sheet of rubber and (C) is the paper that is being tested. (D) is a pedestal with a polished top surface. (E) represents the connection to the air

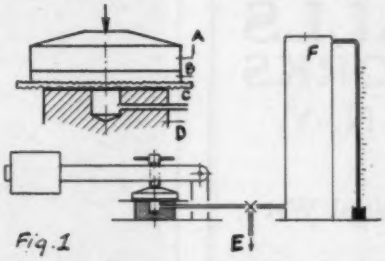
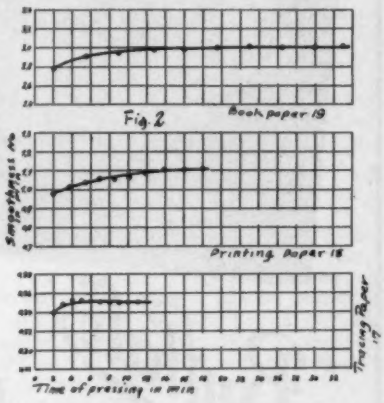


Fig. 1

pump and (F) is the air container. The side of the paper that is being tested is placed next to the smooth surface of the pedestal, and the rubber sheet or disc prevents the access of air to the paper. The pressure applied by means of the pressure plate is one kilogram per square centimeter. After the paper has been placed in position, the evacuated air chamber is connected with the under-side of the paper. The infiltration of air is indicated by the drop in the mercury column of a vacuum manometer connected to the air container. The measure of the smoothness of the paper is the time required for the rise of the air pressure from 360 to 380 mm. of mercury.

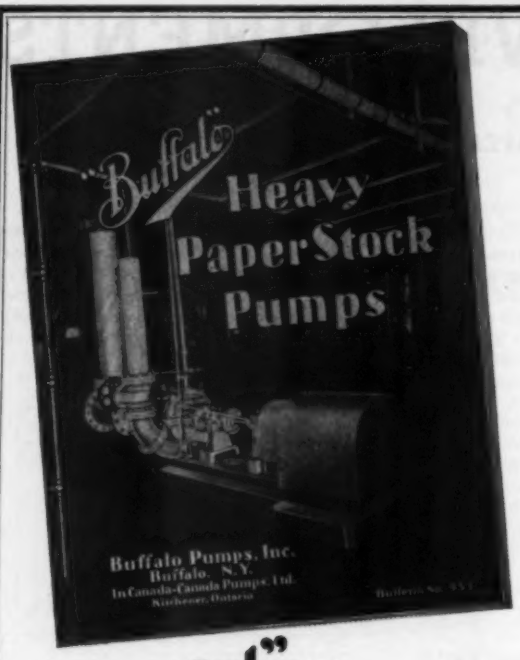
Various tests were made to determine the accuracy of the apparatus. Figure 2 shows the influence of the duration of pressure on the smoothness coefficient of the paper. This instrument is the first that allows the expression of the smoothness of paper in numerical terms. The error in ten demonstrations was found to be 2.5 per cent. The extent of the error does not appear to be affected by the more or less pronounced smoothness of the paper. The influence of the



relative humidity of the air on the magnitude of the smoothness coefficient makes it necessary to carry out the determinations at a constant air humidity. The time of test is from one to two minutes on machine calendered paper. Walter Brecht and Wilhelm Staedel. Zellstoff und Papier, volume 11, pages 679-686.

◆ Rosin Soap for Sizing Paper

A soap is made in which the rosin is combined with the required quantity of sodium carbonate or caustic soda without the addition of water. The saponification is effected in a vacuum. Complete saponification cannot be accomplished at atmospheric pressure, because an equilibrium sets in at a given temperature in accordance with the law of mass action. This equilibrium is between the soap formed on the one hand and the mixture of carbonate and rosin on the other hand, when the carbon dioxide gas evolved attains a certain pressure. On the contrary, the reaction is carried out to completion when a vacuum is applied above the solution. The mixture of rosin and carbonate of soda is brought up to the boiling point. The quantity of carbonate is calculated in such a fashion that a little less than half a molecule of sodium carbonate is added per molecule of resinic acid. The rosin soap then contains ten to twenty per cent of free rosin which is required in good grades of rosin size. The heating is continued for three to four hours at a temperature which does not exceed 250 degrees C. The product is clear and homogeneous. J. G. M. Camille Granel, France. French Patent No. 714,771.



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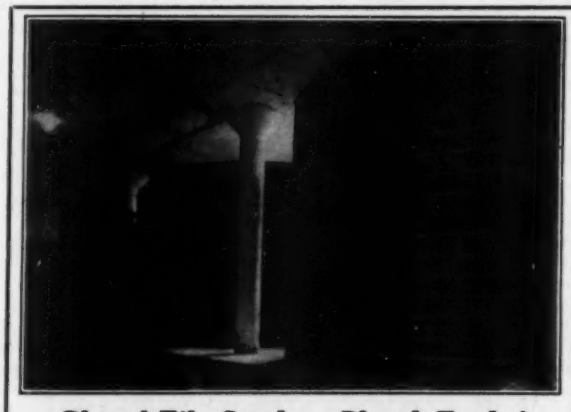

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◆ Antomatic Regulation of Density of Solution

This instrument, which has a general chemical application, is also of interest to the pulp manufacturer. A jet tube regulator is used, in which a jet tube (1) can be rotated around the point (A), and this tube is moved out of its central position by some impulse, such as pressure, temperature, etc. In accordance with the position of the nozzle, the pressure oil which moves

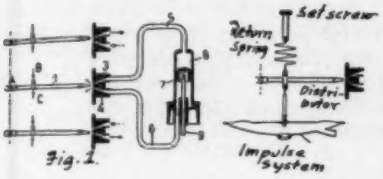

Fig. 1.

through the tube passes through one or the other of the openings (3) and (4), and this accordingly effects the movement of the piston (7) in the regulating cylinder (8). A counter-force, either a spring or a second impulse, is in equilibrium with the first impulse system, so that the jet tube is returned again

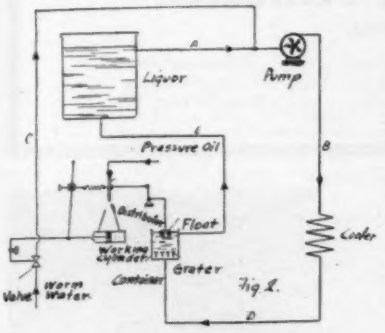

Fig 2.

to its central position, after being shunted to one side or the other.

The regulator functions as indicated in Figure 2. The solution is fed through the line (A) into a centrifugal pump, which forces the same through the pipe (B) into a cooling system and thence through the pipe (D) into a small container. The solution then passes through the connection (E) back again into the tank. A float in the tank is arranged in such a fashion, that it reacts to the variation of the specific gravity and through its connection with the jet tube of the regulating mechanism any variation in the specific gravity is manifested in a movement of the jet tube. The piston, which is connected with the directing device of the jet tube, actuates a valve in the water line (C), which empties into the line (A) in front of the centrifugal pump. When the flow of water is too large, so that the concentration of the solution is diminished, the float sinks and the jet tube is shifted to the right due to the action of the spring. The compressed oil then flows through the right opening in the distributing device and enters the cylinder at (9) under the piston. The result is that the valve on the water line is closed. This results in a change of the specific gravity of the solution and the jet tube then returns to its central position. A grate is located in the float tank or container, so that eddy currents arising from the inflow of the liquid into this tank do not affect the float. There is no consumption of oil in this system of automatic regulation, due to the fact that the oil is continuously circulated. Zellstoff und Papier, 1932, page 21.

◆ Protein Coating Preparation

A protein coating preparation is made from oil containing seeds, such as linseed, peanuts and the like and used in the place of casein in the production of coated papers. A slightly colored oil is first pressed out of the seeds and the latter dried to give a powder. This powder is then treated with alkalies with the result that albumen is dissolved. The solution of albumen is then treated further and used for coating paper and the like. J. F. Laucks. French Patent No. 694,224.

◆ Regulator for Paper Stock

A plan view and longitudinal section are shown in the illustrations. The stock trough is located at (1), while (2) represents an obstruction arranged in the trough in the form of a dam. Two floats are shown at (3) and (4), and (5) is a lever which connects the two floats (3) and (4). This lever is rotatable and its two ends are joined together by means of the connection (6). The floats (3) and (4) are adjustably connected with the lever, so that their distance from the connecting piece (6) may be varied, for the pose of changing the lever ratios of the floats.

The floats or the lever are adjustable in such a manner, that the various parts of this contraption have a normal or initial position and are accordingly in equilibrium, when the density of the stock is of the required magnitude. The speed of the mass is naturally less in front of the dam (side A) than behind the dam (side B), which means that a certain difference in velocity of

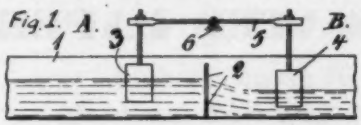

Fig. 1.

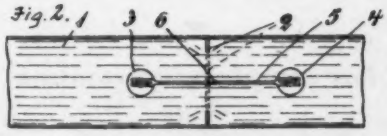

Fig. 2.

flow exists on both sides of the dam. If the density of the stock rises, then the difference in the velocity decreases because the frictional resistance of the mass is considerably greater behind the dam than in front of the latter. This has the following results: In the first place, the level of the stock behind the dam is comparatively higher than in front of the same. Hence, the float (4) is actuated by a stronger force than the float (3). There follows that the lever (5) is moved from its normal position. The lever, which is connected with a valve (this is not shown in the accompanying illustration), actuates the same, and thus effects regulation of the concentration of the mass.

On the other hand, in case the density of the stock decreases, the level of the stock behind the dam decreases more than in front of the dam, for the same reasons that have been discussed above. The result is that the lever is swung around to the other side. The member, which acts to regulate the density of the stock, is accordingly placed in a position which is directly opposite to that in the first case. Hence the valve is opened in the first case for the admission of more water to the stock and closed in the second case to reduce the flow of water. Aktiebolaget A. Ekstroems Maskinaffaer, Stockholm, Sweden. German Patent No. 533,005.

◆ Manufacture of Pulp

The liquor that is used for the digestion of the wood is composed of waste liquor from a previous digestion of wood by the sulphite process and of a solvent which is emulsified in the sulphite liquor as completely as possible. Waste liquor from an unfinished digestion is also used, and the fresh liquor is added either outside the digester or within the same. The substance, that is added to the emulsion of the rosin solvent and the liquor, is added in such a manner to the waste liquor from a previous digestion, that the latter liquor is removed from the digester during the course of a digestion which is not finished. Thus, the digester, which is charged with wood chips in the usual manner, is filled with a sulphite liquor, in which two or three per cent of paraffin hydrocarbons of the benzene series, terpenes or mixtures of the same are emulsified. After the reaction temperature of approximately 105 deg. C. has been attained, the steam is shut off. The digestion is complete within one to three hours, according to the quality of the pulp. The liquor that is recovered from the process and that contains organic solvent, is then employed for the preparation of new liquor. Dr. Max Steinschneider and Aktiensgesellschaft fuer Zellstoff und Papierfabrikation, Aschaffenburg, Germany. German Patent No. 540,052.

◆ Waterproofed Paper and Board

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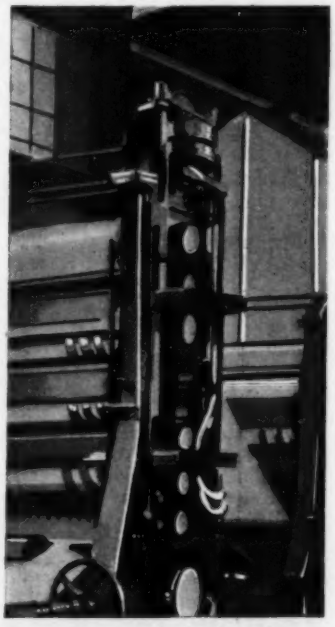

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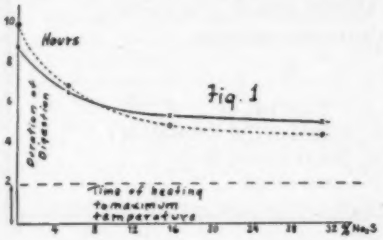
rosin, etc. These substances are first brought to an encysted condition. The encysting precipitate may be formed by reaction of a solution of sodium or potassium silicate, etc., and a precipitating reagent, such as hydrated lime, alum, hydrochloric acid, sulphuric acid, bisulphates, ammonium chloride, etc., or zeolite bodies, such as calcium, magnesium, barium, zinc and aluminum hydrates, chlorides, or sulphates, etc., used to form insoluble hydrated silicates, or mixtures of silicate and silicic acid. The sizing material may contain a protective colloid, such as glue, casein, etc. Mansons, Ltd., Ontario, Canada. British Patent No. 363,372.

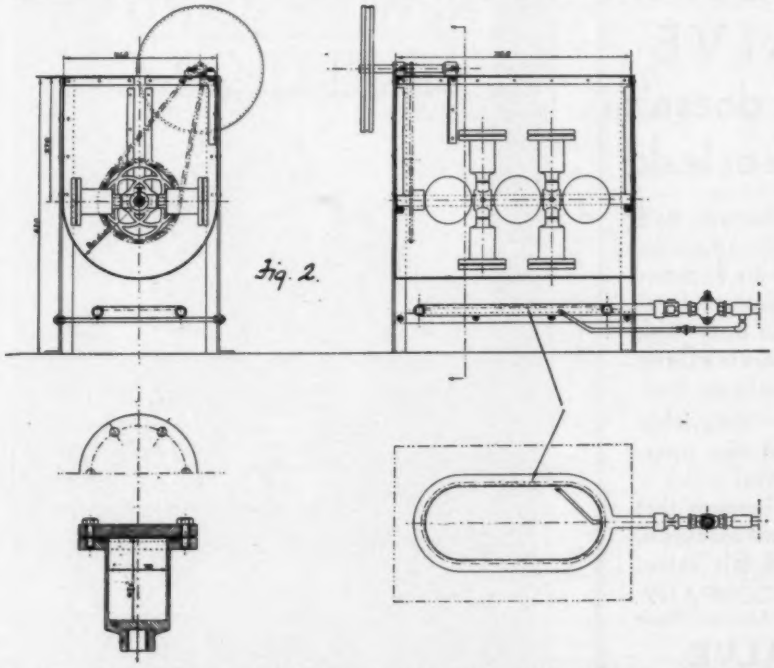
◆ Investigations on the Soda and Sulphate Pulp Digestion Processes

The maximum yield of defibrinatable stock under various conditions of cooking was first determined. It was established that the maximum yield was affected neither by the sulphite content



nor by the maximum temperature of digestion within the range of 150 to 170 deg. C. The speed of reaction depends on different factors and the effects of the temperature and of the content of sodium sulphide in the white liquor were also studied. Various interesting information was developed which is given in the original article both in tabulated and chart form. Thus, as may be seen from Figure 1, the speed of digestion is not much reduced, when the sulphide content is reduced by half. However, from this point on, until the sulphide content is zero, the time of digestion rises with increasing sharpness. The lignin content of the pulp and its relation to the yield and the sulphide content at various temperatures was also studied. It was found here that the lignin content of the pulp was not materially affected by a change in maximum temperature within the range 150 to 170 deg. C., when the digestion is continued until the same yield is attained in all cases. As the content of sodium sulphide in the white liquor rises, the dissolving action of the liquor for lignin increases. When the sulphide content is in excess of sixteen per cent of the total quantity of active alkali in the liquor, then there is no further increase in the dissolving power of the digestion liquor for lignin. A content of approximately sixteen per cent of sodium sulphide in the white liquor increases the speed of digestion almost as much as a rise in temperature of seven to eight degrees C. If the sulphide content is increased to over sixteen per cent, this has no important increased action on the digestion.

The digestion experiments were carried out in steel autoclaves which are rotated within a gas fired furnace. The apparatus is shown in Figure 2. The lignin content serves as a measure of the degree of digestion of the stock. While various analytical methods may be used for determining the lignin, the hydrochloric acid method is the most favorable in this case. Erik Haeggund and Richard Hedlund. Der Papierfabrikant, 1932, pages 49-53; 61-65.



◆ Control Methods in Sulphite Digestion

Various methods, which have been used for controlling the digestion process so that a definite quality of sulphite pulp is obtained, are discussed. It is held that the determination of the pH coefficient of the digestion liquor is very useful. Experiments were made to prove that the change in the actual and the potential acidity of the digestion liquor during the course of the digestion process is not the same in each case. Under normal condition of digestion, the regulatable hydrogen ion concentration determines the speed of the second phase of the digestion process. The experiments, which were carried out on a large scale, show that at digestion temperatures of 138 to 148 deg. C., there is connection between the increase of the hydrogen ion concentration, the improvement of the degree of disintegration of the stock and the decrease of its viscosity. The final values of the actual acidity and of the temperature have an important influence on the quality of the material obtained. In order to attain the same degree of digestion at lower cooking temperatures, it is necessary to use more acid liquors. If the actual acidity is not too high, then the final temperature of the digestion exerts only a slight influence on the quality of the pulp produced. The methods that are used for the determination of the pH coefficient, are given. The author says in conclusion, that the determination of the total acid content at any moment in the digestion permits one to establish the end of the digestion, while the measurement of the pH coefficient affords information regarding the quality of the pulp and the degree of digestion of the same. This refers to the viscosity and to the copper number of the pulp. Milow. Bumaschnaja Promischkennost, volume 10, number 2, page 32.

◆ Evaluation of Wood Pulp for Strength

The great difficulty in carrying out the "beaten" test, that is the determination of a series of evaluations at different stages of hydration, is to design a laboratory beater which will subject the pulp to the same treatment as the mill beaters. Graphs were shown of the varying effects of the beating process on strength and wetness at different stages of the beating process. The four factors which may be considered as primarily influencing paper formation, hydration and strength are felting, fibrillation, surface cohesion and individual fiber strength. There are no definite lines of demarkation. Felting capacity is, for example, intimately bound up with fibrillation and surface cohesion, inasmuch as it is dependent on fiber length, length-breadth ratio, pliability and nature of the surface. Felting, however, is a means to an end,

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not the end itself. When pulp has been beaten sufficiently to prevent slippage of the fibers, the individual fiber strength becomes even more important than the fiber-to-fiber bondage. It is held that the fibrillation, produced by large scale beaters in the early stages of beating, is for the most part accidental, and has little relation to strength. Air-dry pulp beaten in a laboratory ball mill increases very rapidly in strength during the first few minutes' beating, long before any fibrillation is observable under the microscope. Dr. H. A. Harrison. Chemistry and Industry, 1932, 276-7.

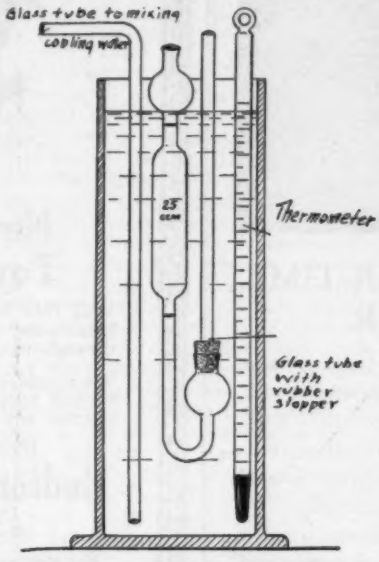
◆ Change in Sulphite Pulp During Bleaching in the Beater

A thorough study was made of the mechanism of the bleaching process. The following measurements were made during the bleaching of sulphite pulp in the beater: temperature; content of active chlorine; chlorine factor according to Tingle; improvement in the copper number; alpha-cellulose content; content of cellulose resistant to baryta, and the resin content. It was established from the change in the content of active chlorine and from the Tingle factor, that the bleaching process consists of two phases. In the first phase, the lignin residue is rapidly removed from the pulp, and in the second phase, the pulp is bleached until the desired degree of whiteness is attained. A portion of the active chlorine is consumed during the course of the first phase for the oxidation of the ingredients that are contained in the mother liquor, without actually taking part in the bleaching process proper.

Increase of the temperature promotes the decomposition of the pulp, resulting in higher copper numbers. The resin content changes only little during the progress of the bleaching process. It is established from the values for alpha-cellulose and cellulose resistant to baryta, that certain changes take place in the composition of the pulp that is being bleached as the bleaching progresses. This refers to the residual lignin, hemicellulose content, etc. It appears advisable to carry out the bleaching process in two stages with interposed washing. It is necessary to determine the bleachability of the stock that is being treated and to control the bleaching process with due consideration of this bleachability. In this instance it is also necessary to watch the bleaching temperature carefully. Shochow and Makowetzkaja. Bumaschnaja Promischlennost, volume 10, number 2, page 62ff.

◆ Evaluating Potato Starch for Papermaking Purposes

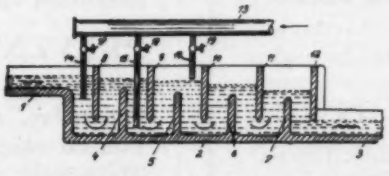
Various earlier methods are described. The viscosity of alkali starch is used as a measure of adhesiveness and the alkali number as an expression of the acid content. The viscosimeter is shown in a water bath in the accompanying illustration. Details are given in the original article on its use. The viscosity of the starch is determined in the cold. A method is also described for the determination of the free chlorine content of the starch qualitatively. This is held to be an important matter. It has been established that a potato flour or



starch to be suitable for the production of paper should have a water content of twenty per cent at a maximum, and a maximum ash content of 0.6 per cent, figured on the weight of the dry substance, and the viscosity should lie at a minimum between 25 and 30 and the more above this latter point, the better the product for the purpose. Furthermore, the starch or flour must not contain any free chlorine or free chlorine ion, that is sodium chloride. Dr. August Noll and Dr. Fritz Hoelder. Der Papierfabrikant, 1932, pages 85 to 88.

◆ Mixing Box for Dilute Stock Mixtures

The purpose of the invention is to introduce the diluting liquid, for example, water, at different inlets of the mixing box, these inlets being located one in front of the other. This arrangement

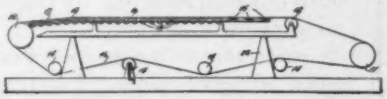


has the advantage, that, when the more or less concentrated mixture of fibers and water has to be greatly diluted, the mixing of the individual fibers and the uniform distribution of the same throughout the mass of water is much more perfect and effective. An additional advantage consists of the fact, that, particularly in the case of long-fiber stock, the latter is prevented from forming bundles or lumps during the dilution process.

In the accompanying illustration, (1) indicates the inlet for the mixture of fibers and water into the mixing box (2). The outlet for the diluted stock is shown at (3), while (4), (5), (6) and (7) represent baffle walls which extend upwards from the bottom of the mixing box and (8), (9), (10), (11) and (12) represent intermediate walls, which extend downward from the top of the box but which do not quite reach the bottom of the box. By fastening appendages to the baffle walls, the heights of the same may be adjusted to meet the conditions of operation of the mixing box. This controls the overflow of stock from one section of the mixing box to the other. The arrangement of the height of the baffle walls is such that this decreases from the wall (4) to the wall (7) in regular manner. The inlet pipe for the mixing liquid is shown at (13) to which branch pipes (14), (15) and (16) are connected which carry the valves (17), (18) and (19), respectively. M. Wiese, Berlin, Germany. German Patent No. 534,869.

◆ Papermaking Invention

Fourdrinier Board Machine—A method of equipping a fourdrinier machine for the manufacture of relatively heavy paperboard is the subject of a patent issued April 12 to Lawrence L. Lapeyrouse, Mobile, Ala. The method provides means whereby the wire can be elevated and run at a steeper incline for a certain distance over that part of the sieve table adjacent to the breast roll and then carried rearward for the



remaining part of the distance either in a horizontal plane, an upwardly inclined plane, or at a declination so as to overcome the difficulty caused by dragging of the stock on the wire. In the accompanying sketch a diagrammatic elevation of a fourdrinier machine constructed according to Lapeyrouse's invention is shown. In this the wire (16) passes around the rolls 10 and 11, and over the rolls 12 and 13 and over and under the roll 14 in the usual manner. It will be seen that at 17 the wire is upwardly inclined from the breastroll 10 and then is horizontally disposed to the guide roll 12. Other forms of the invention are provided in the patent specifications, but all provide for rushing the stock water up a relatively steep incline for a part of the distance over the sieve table and on a less incline or a level or on a slight decline so as to prevent the stock water from dragging on the latter part of its journey over the sieve table. Twelve claims covered in Canadian patent 317,159 and U. S. patent 1,853,625.

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◆ THE 57TH annual conference of the American Forestry Ass'n will be held jointly with the Maryland Forestry Ass'n at Baltimore, May 26-27. Secretary of Agriculture Arthur M. Hyde will head the list of national speakers.

PAYMENT FOR OVER-TIME, $60 PER HOUR

$1 per minute is fairly good pay for any man. Some weeks ago a major executive interested himself in the question of the paper his company used. He procured a set of Hammermill Working Kits and took them home with him. He spent several hours that evening studying them carefully. He discovered two things: First, that it was possible to save money by standardizing on an economical quality paper. Second, he found in the Hammermill Working Kits, suggestions which enabled him to save time in handling office routine. His office force had been reduced. All the executives of the company were working harder. The saving of their time meant increased efficiency as well as an actual saving of money. Two hours spent quietly in the evening without interruption enabled him to make a saving of several hundred dollars for his company. His over-time work paid at the rate of a dollar a minute.

These things are possible in any large business. Running a paper mill is a large business. Supplying a paper mill is a large business. The paper mill and the mill supply house use paper in conducting their business. Few mills make a sufficient variety of grades to supply all of their own needs. They have to buy some paper. The ideas that save time and money for one business can be used to save time and money for another.

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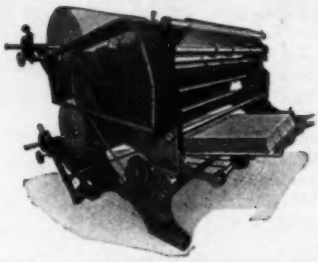

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LOOMFIBRE

A Short-Fibre Paper Filler

The COMMERCIAL OUTLOOK

New York, May 2, 1932.

THERE is no question whatever that if any paper manufacturer or merchant had predicted two years ago, a year ago or even six months ago that business was destined to get down to the extremely low point it has reached, he would have been held up to open ridicule; if not called "crazy." The general business situation has become depressed to a degree which might well be said to be impossible, if it did not actually exist. Industry, trade, sentiment, all are in the doldrums — deep down in the doldrums—and not only is business very bad, but a most unfavorable feature is that sentiment appears shot clean through with innumerable holes.

It is nothing short of surprising that business volume has shrunk to the extent that it has. Admitting that there is much unemployment, that the buying power of the nation has been immensely decreased by wage cuts and people out of jobs, that the depreciation in values in just about every direction has been enormous, still it is difficult indeed to understand why and how the demand for practically all commodities has dwindled to the very narrow extreme now seen. Certainly, it would seem that with by far a larger percentage of the country's population working, producing, earning and spending, demand for most articles could not possibly decrease to such slim dimensions as has been recorded.

Obviously, under prevailing circumstances, activity in the paper market is of restricted compass. Demand is very slow, to state the case reservedly. Manufacturers and distributors alike are complaining of the exceptionally poor condition of the paper market, and of the almost disinterested attitude of consuming and converting buyers. One would think, taking the statements of many in the industry at their face value, that the use of paper has ceased altogether, although of course this is an exaggeration. However, it is perfectly true that current demand for paper and paper products is scarcely sufficient to keep mills even so much as passably busy, and, try as hard as they may, paper manufacturers and their selling organizations are finding it next to impossible to stimulate demand. Purchasers of paper and paperboard are placing orders solely for immediately and actually needed supplies; they are proceeding on the theory that, whatever may happen in the future, they will keep their buying at present down to the proverbial bone. Salesmanship means little or nothing; paper buyers are in a frame of mind where they cannot be persuaded to buy a pound of anything they do not urgently require, and, instead of taking advantage of a market altogether in their favor, they are adhering strictly to just an opposite policy.

Paper manufacturers are fighting for business; so are mill agents, and so are jobbers. Yet on behalf of those on the selling side of the industry, it should be said that a distinct change has come over the trade's attitude in recent months. A large majority of producers and distributors of paper are no longer willing to book orders simply because they are orders and regardless of prices at which they are accepted. Leaders and others in the industry have come to a realization that profit is an all-important matter in these troublesome times and that it is doubly necessary they gain a profit in such business as they secure. As a result a steadier, if not firmer, undertone has arisen in prices of paper; there appears every reason to believe market levels are at rock bottom, and are now only waiting for improvement to set in in the general business situation and spread to the paper market to register some advancement.

When this much-hoped-for improvement will come is still a question for conjecture. Opinions are being expressed daily that the depression has spent its force and that brighter days lie ahead. There is consolation in the knowledge that the paper industry should be one of the first of the major industries to experience the revival, when it begins. But, on the other hand, it is commonly admitted that activity in the paper market is unlikely to increase until the general business condition commences to mend.

Production of newsprint paper in the United States and Canada scored a rise during March as compared with the preceding month, reaching a total of 266,792 net tons in both countries, against 245,700 tons manufactured in February, according to statistics compiled by the News Print Service Bureau. The United States output in March amounted to 100,034 tons, contrasted with 87,157 tons in February, while mills in Canada produced 166,758 tons in March, against 158,543 tons in the preceding month. The March production compared with a total of 287,595 tons manufactured in both countries in the same month last year, a decrease of 20,803 tons or approximately 7 per cent.

Board output in the United States amounted to 186,489 net tons in February, compared with 182,306 tons produced in January this year and 205,785 tons in February a year ago, according to the monthly summary of the U. S. Department of Commerce. Production during the first two months of the current year was 368,795 tons, or at 58.2 per cent of mills' capacity, against 417,476 tons or 67.2 per cent of capacity of mills in the corresponding period of 1931. New orders received by manufacturers for board during February called for a total of 188,914 tons, against 189,131 tons in the preceding month, and unfilled orders held at the end of February were for 42,663 tons, compared with 43,862 tons a month before. Shipments of board from mills in February aggregated 190,113 tons, compared with 187,118 tons in January last, and stocks on hand at mills at the end of February were 76,565 tons, against 80,189 tons a month previously. These figures show that more board was shipped from mills than was manufactured during February, and that mill stocks recorded a corresponding decrease.

There are signs that consumption of newsprint is tending to rise, at least in the large cities where newspaper circulation is reported holding up well and where merchants are utilizing much space in the daily press to advertise their wares. Print paper is moving steadily against contracts but there is little new buying of spot character. Wrapping paper is holding fairly steady in price under a routine demand, with the market bare of interesting trading feature. Writing paper demand has shown some evidences of improvement but chiefly of a casual character. Tissue paper is in a quiet market position, and the demand for book papers is reported poor. Specialties are favored with a moderate call from consuming quarters though the volume of buying is small. Paperboards have slowed down considerably since the pre-Easter season, and demand now is quite limited; prices as quoted, however, are maintained.

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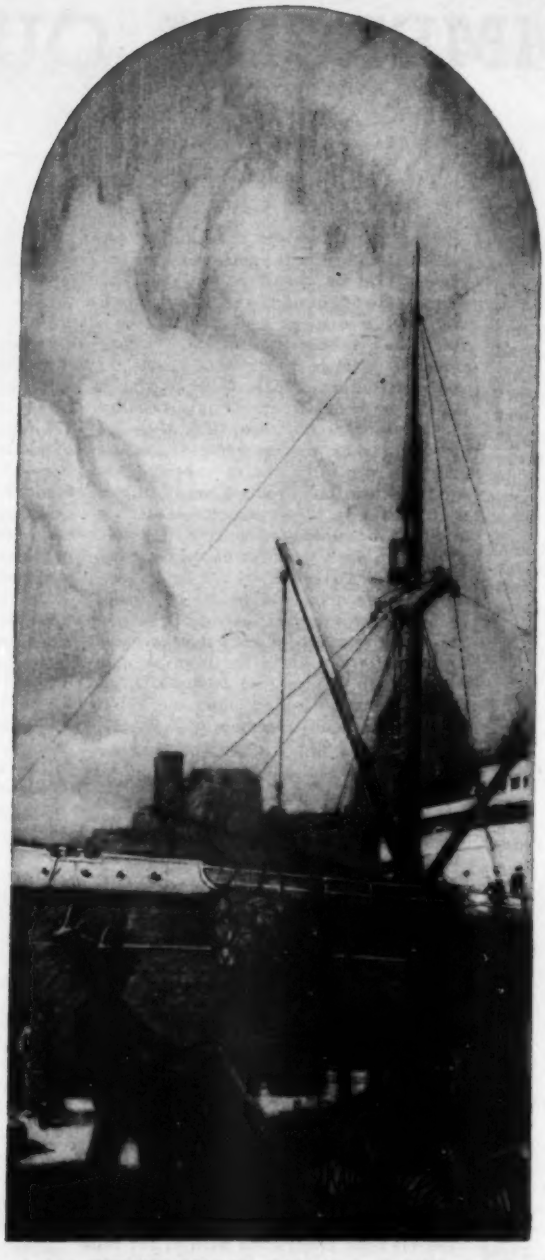
◆ ACCORDING to a note in *The World's Paper Trade Review*, an inventor of Budapest has succeeded in making a paper violin that excels wood in sound. The pulp is prepared in the same way as for making paper buckets, shovels, etc., and in this way the long period required for seasoning wood is avoided. A violin of wonderful sonority and cheapness can be made in a few days, it is claimed.

◆ A REPLICA of the Golden Pavilion of the Temple of Potala in Jehol, Chinese Turkestan, is to be erected in Chicago and form part of the display at the Century of Progress Exposition in 1933. This information is contained in Sven Hedin's book *Across the Gobi Desert*, published this month, by E. P. Dutton & Co., New York.

◆ THE NATIONAL ASSOCIATION of Purchasing Agents will be held at the Book-Cadillac hotel in Detroit, Mich., June 6 to 9.



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Domestic RAW MATERIALS

◆ Papermaking Rags

About the best that can be said concerning the market for papermaking rags is that a little demand of exceedingly spotty character is emanating from some consuming quarters. From a general standpoint, paper manufacturers are engaging in very skimpy buying of rag stock. One reason, and unquestionably the most important, is that papermakers are not in need of many rags; with production of paper appreciably curtailed and with demand running largely to the cheaper lines of paper into the manufacture of which rags fail to enter, mills obviously are not consuming anything approaching normal quantities of rags and therefore can readily afford to hold off as purchasers of such raw material. Another factor contributing to the market's dullness is the sentiment prevailing among paper manufacturers, who apparently feel that plenty of rags are available and there is accordingly no justification for them stocking up at a time when prospects in their own market are so uncertain.

Consequently, the orders being placed are few and far between and seldom call for other than small tonnage. It is realized that certain individual grades of papermaking rags are in low supply, chiefly because they have not been produced except in a small way for some time — this applying in particular to some of the new cotton cuttings. Yet the theory of consumers is that when trade conditions in general improve and the need for such rags is larger, the likelihood is clothing manufacturers will become busier and production of the descriptions of rags now scarce will increase. It is appreciated also that imports of rags for papermaking have fallen off tremendously, as proved by Government figures covering recent months, but paper manufacturers believe that when the requirements of consuming mills expand, the rags wanted will be found available in foreign sources, though higher prices probably will have to be met. Moreover, it is felt that when the general situation starts to mend, collections of old rags the country over will be stimulated, and incoming supplies will increase to an extent fully ample to satisfy the needs of paper mills.

Meanwhile, business in rags is of very slim proportions, and prices continue altogether in favor of buyers. Some pressure to sell new cotton cuttings has been reported and papermakers have been enabled to buy certain of these rags at further recessions in cost. There have been reports of No. 1 white shirt cuttings selling to mills at 4.25 cents a pound f.o.b. shipping points and even lower, although most dealers ask above this price level. Unbleached muslins are steady at 5.50 to 5.75 cents a pound at dealers' points, while new blue overall cuttings are said to be available at 4 cents and possibly at less, bleached shoe cuttings at 4 cents, light silesias at 3.75 cents, and fancy shirt cuttings at 1.75 cents per pound.

In old rags, roofing grades are in principal demand and prices are adhering to fairly maintained levels of about 60 cents per hundred pounds at shipping points for No. 1 and 45 cents for No. 2 packing. Old white cottons are very quiet, with prices uncertain and mainly nominal, and nothing more than occasional sales of thirds and blues are recorded. Repacked blues are said to be offered at 1.15 cents and lower per pound, and rough blues at 60 cents a hundred. All descriptions of foreign rags are strictly nominal in price since so little business is passing that the market lacks established levels of value.

Average quotations f.o.b. shipping points and ex dock New York, many of which should be considered nominal, follow:

NEW STOCK

	New York and Chicago
White shirt cuttings, No. 1	4.25-4.50
White shirt cuttings, No. 2	3.25-3.50
Fancy shirt cuttings	1.75-2.00
Washables, No. 1	1.75-2.00
Unbleached muslins	5.50-5.75
White lawns	3.25-3.50
Overall cuttings, blue	3.75-4.00
Black silesias	2.50-2.75
Canton flannels, bleached	4.50-4.75
Canton flannels, unbleached	4.00-4.25
Shoe cuttings, bleached	4.00-4.25
Shoe cuttings, unbleached	3.50-3.75
Light silesias	3.75-4.00
O. D. khaki cuttings	3.75-4.00
Mixed khaki cuttings	3.25-3.50
Corduroy cuttings	2.25-2.50
Cottonade cuttings	1.50-1.75
Linens, No. 1 white, foreign	6.50-7.00
Light prints, foreign	2.00-2.25

OLD STOCK

Whites, No. 1, repacked	2.50-3.00
Whites, No. 2, repacked	1.50-2.00
Whites, house soiled	1.25-1.50
Whites, street soiled	1.10-1.25
Thirds and blues, rough	.60- .75
Thirds and blues, repacked	1.00-1.25
Lace curtains	2.50-2.75
Black stockings	1.75-2.00
Cotton canvas, No. 1	3.00-3.25
White cotton batting	1.00-1.25
Roofing, No. 1 (cloth strippings)	.60- .70
Roofing, No. 2	.45- .55
Linsey garments, foreign	.70- .75
Dark colored cottons, foreign	.55- .60
Blue linens, foreign	2.75-3.00
Gray linens, foreign	3.00-3.25
White linens, foreign	4.75-5.00
Light prints, extra foreign	1.50-1.75

◆ Rope and Bagging

Prices of old rope are adhering to rather stationary levels although a quiet market exists for this papermaking material. Domestic old manila rope of No. 1 quality is reported bringing 1.50 to 1.75 cents a pound f.o.b. shipping points, while No. 1 foreign rope is on a price basis of 1.40 to 1.60 cents ex dock American Atlantic ports. Most purchases by mills are admitted to be at near the lower edges of these quotational ranges, with buyers having little difficulty getting all the supply wanted.

There has been a little run of demand for old gunny bagging, and sales of No. 1 domestic gunny have been recorded at around 90 cents per hundred pounds at shipping points. Scrap burlap bagging continues quiet and quotable at 70 cents to slightly higher at dealers' points, while roofing bagging has sold in routine fashion at unchanged prices.

F.o.b. shipping point and ex dock New York quotations follow:

Gunny, No. 1 domestic	.90-1.00
Gunny, No. 1 foreign	1.00-1.10
Scrap bagging, No. 1	.70- .80
Roofing bagging	.40- .50
Wool tares, heavy	1.00-1.15
Wool tares, light	1.00-1.10
Manila rope, No. 1 foreign	1.40-1.60
Manila rope, No. 1 domestic	1.50-1.75
Sisal strings	1.15-1.30
Mixed strings	.60- .70

◆ Old Paper

After having exhibited fair activity involving most grades, the market for waste paper has quieted perceptibly. This is especially so as concerns the situation in the East, reports from New York telling of a much slower demand there from mills and of prices moving lower. The western market is holding steadier, both from a business and price standpoint. At the same time, it is apparent that paper and board manufacturers are purchasing old paper on a very reserved scale while not being in need of anything approaching normal tonnage, and such changes as have occurred in price levels recently have been, with few exceptions, in a downward direction.

Soft white shavings of No. 1 quality are reported available in the East at 1.40 cents a pound f.o.b. shipping points, and perhaps at less, while No. 1 hard white shavings are offered at 1.65 cents a pound up to 2 cents, depending on the packing. Book stock has eased a little in price to 55 to 65 cents per hundred pounds at shipping points for No. 1 heavy magazines, and old No. 1 kraft paper has declined to where sales to mills at as low as 70 cents a hundred pounds have been reported. Ledger stock and manilas have been in exceptionally limited demand and prices of these grades are mainly nominal, with the probabilities favoring buyers getting some supply at figures under those named as market quotations. Prices of folded news and No. 1 mixed paper have receded to 25 cents and 15 cents per hundred pounds, respectively, in the East f.o.b. New York though higher prices prevail in the Middle West.

The following are quotations f.o.b. shipping points:

	New York and Chicago
Hard white shavings, No. 1	1.65-2.00
Hard white shavings, No. 2	1.50-1.65
Soft white shavings	1.40-1.60
Colored shavings	.50- .60
Heavy book, No. 1	.55- .65
Crumpled book, No. 1	.40- .50
Ledger stock	.50- .80
Kraft, No. 1	.70- .85
New kraft cuttings	1.40-1.50
White blank news	1.30-1.40
Manilas, No. 1	.40- .50
Manilas, container	.25- .35
Folded news	.25- .40
Sulphite mill wrappings	.35- .50

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Old corrugated boxes	.30- .40
New corrugated box cuttings	.40- .50
Mixed paper, No. 1	.15- .30
Common paper	.10- .20

◆ Pulpwood

There is limited demand reported for pulpwood in the open market. Now and then a manufacturer makes his appearance as a buyer but even in such exceptional instances the quantity of wood purchased is small. Most consumers are getting along with contract supplies without having to resort to additional buying. Prices ruling in the New York up-State territory continue around $14 a cord f.o.b. mills for four-foot peeled, $16 for hand-shaved and $18 for rossed wood.

◆ Mechanical Pulp

The market for mechanical wood pulp is quiet. There is, of course, a steady movement of some dimensions into consuming channels against contracts and back orders, but reports tell of very little current activity developing. Consumers simply are not in need of supplies and cannot be prevailed upon to buy unless the necessity is pressing, and with the Spring of the year here and with it plenty of water in grinding mill streams, grinders are able to operate their plants at full tilt and some pressure to sell is being exerted. Obviously under these market circumstances the price tone is anything but firm. Buyers are getting pulp at favorably low costs, and in some cases sales have been reported at prices which, judging from their low level, represent sacrifice values. Canadian groundwood is said to have been bought down to $15 a ton f.o.b. pulp mills in the Dominion, though quotations generally range between $17 and $18, with prices depending largely on the haul to consuming centers and the air dry test. Domestic groundwood is about $21 to $22 a ton f.o.b. grinding mills.

◆ Chemical Pulp

West coast manufacturers are reported holding fairly firmly to a price basis of 2.10 cents per pound ex dock Atlantic seaboard for bleached sulphite, and refusing to sell under this level. Nevertheless it is said that some bleached sulphite of domestic or Canadian origin is available at slightly less, or down to 2 cents a pound at pulp mills, while special grades of such pulp range in price all the way up to 3 cents and higher. Domestic unbleached sulphite is quoted from 1.50 to 1.85 cents, according to grade, f.o.b. producing mills. Bleached soda pulp is maintained quotably at 2.50 cents per pound delivered paper mills, with the several leading manufacturers adhering steadfastly to this price. Domestic kraft pulp is around 1.75 cents a pound at pulp mills. The market is far from active although some pulpmakers are reported shipping out fair-sized tonnages against contracts. It would appear as if pressure to sell has diminished, indications being that producers are bent on receiving certain minimum prices for their pulp and refusing to meet competition at cheaper levels. The situation in pulp has been much upset, from a sentimental standpoint, during the last month, owing to tariff talk, the shut down of Swedish pulp mills, and the general unwillingness of paper and board manufacturers to buy unless having urgent need of pulp.

Quotations f.o.b. pulp mills are as follows:

Bleached sulphite	2.00-3.50
Easy bleaching sulphite	1.80-2.00
Unbleached sulphite, No. 1 strong (news grade)	1.50-1.75
Unbleached sulphite, No. 1 book	1.65-1.85
Soda pulp bleached (delivered)	2.25-2.50
Kraft	1.65-1.90
Screenings, refined	(Nominal)

◆ Chemicals

Casein prices have weakened further and the domestic product is quoted at 6 cents a pound for the standard ground and 7 cents for the finely ground, while Argentine casein is selling at 8.25 cents up to around 9 cents. Not much change is reported in other papermaking chemicals. The market is characterized by routine activity chiefly, which is to say that the principal movement of supplies is against contracts. Brimstone holds in price at $18 per long ton at mines for sizeable tonnage, caustic soda is 2.50 to 2.55 cents a pound for the solid product, and soda ash is 1.15 to 1.25 cents for the 58 per cent light ash packed in bags.

Average quotations are as follows:

Alum, lump ammonia	3.25- 3.50
Alum, lump starch	3.50- 3.75
Blanc fixe, powdered	3.25- 3.50
Bleaching powder	1.75- 2.00
Brimstone (long ton, at mine)	18.00-20.00
Casein (duty paid	6.00- 9.00
Caustic soda, solid, spot delivery	2.50- 2.55
China clay, domestic washed	7.00-11.00
China clay, foreign	11.00-13.00
Rosin	3.75- 4.00
Satin white	2.00- 2.25
Soda ash, 58 per cent light (bags)	1.15- 1.25
Starch, papermaker's in bags	2.54-
Talc (ton)	16.00-18.00

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NEW YORK CITY

◆ THE HINDE & DAUCH Paper Company, manufacturer of paper board and paper containers with headquarters in Sandusky, Ohio, and mills and plants in various cities of the country, has purchased a site in Hoboken, N. J., comprising 52 city lots and located at Monroe and Ninth streets, where it is reported a large new plant will be erected to supplement the company's production in its Brooklyn plant for serving the metropolitan New York area.

◆ CHARLES ADDOMS, vice president and treasurer of the Miller & Wright Paper Co., New York, has accepted the chairmanship of the paper industry section of the Trades and Industry Division in the Salvation Army United Appeal for $1,090,000. Mr. Addoms will cover the entire paper industry field. The appeal will be launched in May, to enable the Salvation Army to continue its emergency relief work among the unemployed and needy, and to carry on its institutional work.

◆ Paper Council Sets Date for Annual Convention

The next annual convention of the American Paper and Pulp Association will be held in the Hotel Pennsylvania, New York, from February 13 to 17, 1933, it was announced following the quarterly meeting on April 22 in New York of the National Paper Council, composed of twelve representatives of the various grade associations. S. L. Willson, president of the Association and of the council, who is also president of the American Writing Paper Company, Holyoke, Mass., presided at the council meeting, at which internal policies of the Association on current legislation were discussed in executive session. C. W. Boyce, executive secretary, said the council was "decidedly in favor of balancing the national budget," but he declined to reveal the policies of the organization as to the sales tax or other methods which might be employed.

◆ WILLIAM E. EBBETS, until recently secretary and general manager of Coy, Disbrow & Co., Inc., paper merchants of New York, and one of the most widely known individuals in the metropolitan paper trade, has opened an office at 63 Park Row, New York, where he will act as mill representative for the sale of paper of various kinds to merchants and converters in the New York territory.

◆ AT THE ANNUAL meeting of stockholders of the Union Bag & Paper Company, held in New York, C. W. Goodyear and Stanton Griffis were elected directors to fill vacancies. Retiring directors were re-elected.

◆ H. C. BARBOUR, for many years sales manager and treasurer of the International Pulp Stone Company, of Elyria, Ohio, is now associated with the core department of the International Paper Company, in New York, of which Herbert Lippitt is the manager.

◆ H. ROSENBERG & CO. is the name of a new concern just organized in New York City with offices and plant at 29 Willett street to deal in new cotton cuttings for paper manufacturers. At the head of the company is Harry Rosenberg, long experienced in paper mill supplies and well known in the trade. The new concern will acquire cuttings from clothing producers and grade and pack them for the particular purposes of paper mills.

◆ WILLIAM NEWTON AGNEW, traffic manager of the Worthington Pump and Machinery Corp., New York City, since 1910, and also assistant to the president for the past three years, passed away suddenly April 12 at his home in New York. Mr. Agnew was a member of the board of governors of the New York Traffic Club, and he was well known in railroad and industrial circles.

CHEMICAL AND MECHANICAL PULP

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Svanö Aktiebolag, Svanö, Sweden
Aktieselskabet Greaker Cellulosefabrik, Greaker Norway

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Nensjö Cellulosa A.—B., Sprängsviken, Sweden
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Bleached Sulphite

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Import and Export MARKETS

EXPORTS

Exports of paper and paper products from the United States registered an increase, in point of total value, during February, as compared with shipments in the preceding month, yet were well below the value of exports in the corresponding month last year. Total exportations in February amounted in value to $1,448,278, contrasted with $1,327,459 in January this year and $1,809,857 in February a year ago, according to official figures compiled and issued by the U. S. Department of Commerce in Washington. Exports during the first two months of the current year reached a value of $2,775,813, against $3,860,469 in the similar period of 1931.

Exports of newsprint in February were 842,279 pounds of a value of $24,025, compared with 1,796,199 pounds of a value of $59,942 in the same month last year. Uncoated book paper shipments in February reached a value of $38,888, compared with $75,183 in February, 1931, while wrapping paper exports were valued at $116,624 in February, against $141,736 in the same month of last year. Tissue and crepe paper exports declined from a value of $51,319 in February, 1931, to $19,656 in the similar month this year, while writing paper shipments were valued at $73,737 during February, contrasted with $106,103 in the same month a year ago. Paper bag exports were valued at $40,870 in February, against $56,720 a year ago, and paper box and carton shipments were of a value of $62,222, against $76,260.

Boxboard exports in February were valued at $189,735, showing an increase over the $105,596 worth exported in 1931, while other paperboard exports declined from $105,160 in February, 1931, to $58,779 in the similar month this year.

IMPORTS

◆ Wood Pulp

There have been developments of importance in the wood pulp situation during the past month. A general strike has been declared in the Swedish pulp manufacturing industry, and pulp mills in Sweden are now shut down. This happening occurred rather suddenly when negotiations conducted by the Government Mediation Commission broke down, and the pulp mill workers walked out. According to advices, practically every pulp mill in Sweden is affected, which means that the production of pulp in that country has come to a complete halt.

On April 25, the Finance Committee of the Senate in Washington voted down the proposal to put wood pulp on the dutiable list in the tariff clause of the new tax bill now being considered by Congress. This ended, at least temporarily, what has developed into a bitter fight between two factions within the paper and pulp industry of the United States—the one composed of domestic producers of pulp, mainly on the West coast, in favor of a pulp tariff, and the other the several hundred conversion mills who oppose a duty on their principal raw material.

The vote of the Senate Finance Committee on the pulp tariff was 11 to 6 opposed. This does not necessarily terminate the controversy over a duty on imported pulp, since the subject may, and is likely to be, brought up again on the floor of the Senate when the tax measure reaches that stage. The battle over the pulp tariff was a hot one prior to the vote of the Senate in committee. Domestic pulp interests, flanked by self-contained paper mills, urged the imposition of the duty, while representatives of the converting paper mills fought just as hard against a tariff.

The shutdown of pulp mills in Sweden means that a big percentage of the world's production of wood pulp is eliminated from the world market, and is of prime importance. Whether or not the strike will last is a matter for conjecture. Many in the trade believe it will, basing their opinion on the fact that the dispute regarding a wage reduction is a deep-rooted affair which months of persuasion and efforts to smooth over failed to meet with any success. On the other hand, late reports from abroad say that the Mediation Commission is again striving to bring the warring factions to agreement. Should the strike continue for any appreciable length of time, it is not beyond the realms of probability that a shortage of pulp might ensue, even despite the greatly reduced world consumption of pulp at present. Especially is this so as concerns kraft pulp. Other European manufacturers might make up the loss in production of sulphite, but they are not equipped to take Sweden's place as a producer of kraft fibre.

The market for imported wood pulp is quiet. In fact, there is very little or no activity of any importance current in the trade. Most paper manufacturers in the United States are in a position of having more pulp on hand or on order than they require under prevailing market conditions in their products, and are engaging in very limited fresh buying. Importations in recent months have been heavy, and consumption by mills in this country has declined appreciably.

Nevertheless, there is a steady undertone to prices of foreign pulps. Bleached sulphite is quoted in most instances at 2.10 cents per pound ex dock American Atlantic seaboard, and strong prime unbleached sulphite at 1.60 cents. Kraft of prime quality is on a basis of 1.50 cents per pound. Perhaps these prices can be shaded in exceptional cases, but importers and agents as a general thing are holding firm for these figures, and quoting higher on special mill brands. Imported groundwood of Scandinavian origin is quoted at $19 to $20 per short ton ex dock.

Pulp imports into the United States during February totaled 153,546 long tons of chemical, valued at $5,971,780, compared with 173,229 tons of a declared value of $6,508,692 in the preceding month, and 100,921 tons of a value of $4,775,302 in the same month last year, according to U. S. Department of Commerce statistics. The big February importations were due in principal part to the large receipts of unbleached sulphite, which amounted to 71,970 tons, valued at $2,680,061. Groundwood imports in February were 17,078 long tons, valued at $332,627, contrasted with 13,979 tons of a value of $380,338 imported in the similar month of 1931.

Current market quotations ex dock New York, and receipts at the port of New York during April, 1932, these data being taken from manifests of steamers reaching that port last month, follow:

Bleached sulphite, No. 1	2.00- 3.50
Unbleached sulphite, strong No. 1	1.50- 1.75
Unbleached sulphite, No. 2	1.40- 1.50
Easy bleaching sulphite	1.75- 2.00
Mitscherlich, unbleached, genuine	1.85- 2.00
Mitscherlich, unbleached, ordinary	1.55- 1.75
Kraft, standard Swedish	1.50- 1.75
Groundwood, per ton (dry)	19.00-20.00

Price & Pierce, Ltd., 125 bls. from Oslo and 2,900 Wallvik; Castle & Overton, 2,890 bls. from Rotterdam, 987 Hango and 2,000 Hamburg; Lagerloef Trading Co., 3,301 bls. from Hango; J. Andersen & Co., 2,192 bls. from Oslo and 375 Gothenburg; Atterbury Bros., 543 bls. from Oslo; Brown Bros. & Co., 1,250 bls. from Oslo; Central Hanover Bank & Trust Co., 250 bls. from Oslo; Chemical Bank, 3,150 bls. from Oslo; E. M. Sergeant Co., 300 bls. from London and 450 Oslo; Perkins-Goodwin Co., 1,000 bls. from Oslo; Guaranty Trust Co., 254 bls. from Gothenburg; Parsons & Whittemore, 300 bls. from Oslo;

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Unexcelled for strength, openness, resiliency, and general running qualities. Made to meet the most exacting conditions on all types of machines and all kinds of papers. Only one grade and that the highest.

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ABSOLUTELY NO FELT MARKS IN PAPER

TRIUNE Three Ply Felts for extra long service and large production

North German Lloyd, 250 bls. from Bremen; E. J. Keller Co., 365 bls. from Hamburg; Order, 2,088 bls. from Hamburg, 135 Oslo and 286 Trieste.

◆ Paper Stock

Imports of rags for papermaking into the United States in February amounted to 7,692,561 pounds, of a declared value of $115,672, compared with 7,977,091 pounds of a value of $110,132 in the preceding month, according to official figures compiled by the U. S. Department of Commerce. Imports of other paper stock were 6,162,826 pounds of a value of $69,103 in February, against 17,096,429 pounds of a value of $86,712 in January last.

Importations of paper stock registered a further falling off during April, judging from the light receipts through the port of New York. Arrivals of papermaking materials of all kinds at that port last month, these data being taken from manifests of steamers reaching New York during the month and therefore unofficial, were as follows:

Old Rope—E. J. Keller Co., 259 coils; Banca Commercial Italiana Trust Co., 392 bls.; Castle & Overton, 48 coils; United Fruit Co., 3 bls.; Continental Bank, 29 coils and 37 bls.; Order, 290 coils and 144 bls.

Old Bagging—Darmstadt, Scott & Courtney, 84 bls.; Castle & Overton, 174 bls.; E. J. Keller Co., 108 bls.; Continental Bank, 217 bls.; Order, 154 bls.

Rags—S. Birkenstein & Sons, 103 bls.; Darmstadt, Scott & Courtney, 98 bls.; Castle & Overton, 68 bls.; J. Cohen & Son, 31 bls.; J. Damato, 140 bls.; Armstrong Cork Co., 609 bls.; A. W. Fenton, Inc., 63 bls.; Mitsui & Co., Ltd., 33 bls.; J. Reiss & Co., 10 bls.; G. Schuster, 6 bls.; E. J. Keller Co., 371 bls; Barrett Co., 252 bls; Katzenstein & Keene, 113 bls.; Bank of New York & Trust Co., 401 bls.; Chase National Bank, 73 bls.; New York Trust Co., 245 bls.; Order, 586 bls.

Miscellaneous Paper Stock—Irving Trust Co., 38 bls.; T. D. Downing & Co., 81 bls.; R. F. Downing & Co., 266 bls.; Castle & Overton, 107 bls.; Barrett Co., 139 bls.; Bank of New York & Trust Co., 64 bls.; E. J Keller Co., 149 bls.; Order, 248 bls.

◆ Paper

Imports of paper into the United States decreased to a total value of $6,900,617 in February last, contrasted with $9,045,070 worth of importations in the preceding month and $9,871,476 in the similar month last year, according to statistics compiled and issued by the U. S. Department of Commerce. Standard newsprint comprised the great bulk of the imports in February, receipts of such paper being valued at $6,152,581 during the month.

Paper imports were at a very low level in April, taking the arrivals at the port of New York, as a criterion. Receipts of all kinds of paper at that port last month, these data being taken from manifests of vessels reaching New York during April and therefore unofficial, were as follows:

Printing—Baldwin Paper Co., 110 reels from Hamburg; C. Steiner, 8 bls. from Hamburg and 14 cs. Bremen; Perkins-Goodwin Co., 391 reels from Hamburg and 383 reels Bremen; International Forwarding Co., 4 cs. from Antwerp; W. H. Bell, 9,153 rolls from Liverpool, N. S.; E. Dietzgen & Co., 19 cs. from Southampton and 84 cs. Rotterdam; Keuffel & Esser Co., 44 cs. from Hamburg; Gilman Paper Co., 274 rolls from Norrkoping; P. Puttmann, 22 cs. from Antwerp; Brooklyn Times, 281 rolls from Norrkoping; P. C. Zuhlke, 27 cs. from Bremen; Order, 6,353 rolls from Hamburg, 850 rolls and 111 bls. Oslo, and 1,143 reels and 284 bls. Bremen.

Wrapping—Phoenix Shipping Co., 60 rolls from Rotterdam; Borden & Riley Paper Co., 6 cs. from Bremen; Borregaard Co., 168 bls. and 1,264 reels from Gothenburg; H. Reeve Angel & Co., 14 bls. and 12 rolls from Gothenburg; Chase National Bank, 38 bls. from Gothenburg; Van Oppen & Co., 27 cs. from Genoa; Sanita Wrapping Products Corp., 28 cs. from Genoa; D. E. Bordner, 15 cs. from Hamburg; Order, 155 cs. from Antwerp.

Cigarette—G. A. Henshaw & Co., 27 cs. from Hamburg and 27 cs. Southampton; American Tobacco Co., 690 cs. from Havre and 200 cs. Bordeaux; Champagne Paper Corp., 664 cs. from Havre, 3 cs. Southampton and 70 cs. St. Nazaire; De Mauduit Paper Corp., 20 cs. from Havre and 1,900 cs. St. Nazaire; P. J. Schweitzer, Inc., 14 cs. from Havre and 51 cs. Marseilles; Standard Products Corp., 366 cs. from Havre; M. Spiegel & Son, 10 cs. from Hamburg; Chase National Bank, 7 cs. from Trieste; D. E. Bordner, 2 cs. from Hamburg; Order, 2 cs. from Genoa.

Filter—H. Reeve Angel & Co., 48 cs. from London and 99 cs. Southampton; Panama-Pacific Line, 2 cs. from London; J. Manheimer, 40 bls. from Southampton; A. Giese & Son, 59 bls. from Southampton; C. Sleicher & Scholl Co., 11 bls. from Hamburg.

Drawing—P. Puttmann, 1 cse. from Antwerp; Keuffel & Esser Co., 20 rolls from Hamburg; Favor, Ruhl & Co., 11 cs. from Genoa; H. Reeve Angel & Co., 9 cs. from London.

Writing—M. Picciotto, 4 cs. from Southampton.

Tissue—Schenkers, Inc., 12 cs. from Hamburg; B. F. Drakenfeld & Co., 4 cs. from Liverpool; W. J. Byrnes & Co., 5 cs. from Southampton.

Photo—Gevaert Co. of America, 124 cs. from Antwerp; Globe Shipping Co., 373 cs. from Bremen; P. Puttmann, 5 cs. from Antwerp; J. J. Gavin & Co., 5 cs. from Southampton; P. C. Zuhlke, 12 cs. from Bremen.

Hanging—Irving Trust Co., 4 cs. from Hamburg; F. J. Emmerich & Co., 2 bls. from Liverpool and 3 cs. Hamburg; Guaranty Trust Co., 37 cs. from Hamburg; C. A. Haynes & Co., 2 bls. from London; R. F. Downing & Co., 15 bls. from Kobe.

Cover—Globe Shipping Co., 3 cs. from Hamburg and 221 cs. Bremen; Taub, Hummel & Schnall, 15 cs. from Hamburg; J. A. Nash, 156 cs. from Antwerp; Hensel, Bruckman & Lorbacher, 111 cs. from Hamburg and 48 cs. Bremen.

Board—Henry Fuchs & Son, 25 bls. from Gothenburg; R. F. Downing & Co., 3 cs. from Hamburg; Order, 7 cs. from Havre and 21 bls. Hamburg.

Miscellaneous—F. Murray Hill, Inc., 6 cs. from Hamburg; Irving Trust Co., 15 cs. from Hamburg and 3 cs. from Kobe; Keller-Dorain Paper Co., 2 cs. from Havre and 5 cs. Southampton; F. C. Strype, 5 cs. from Antwerp; S. Gilbert, 5 cs. from Bremen; W. Bersch, 17 cs. from Bremen and 13 cs. Hamburg; Walker, Goulard, Plehn Co., 9 bls. from Rotterdam; J. Romer, 5 cs. from Osaka; B. F. Drakenfeld & Co., 51 cs. from Liverpool; T. N. Fairbanks, 5 cs. from Genoa; Gallagher & Ascher, 5 cs. from Rotterdam; Ipex & Co., 6 cs. from Rotterdam; J. E. Bernard & Co., 4 cs. from Gothenburg; Borden & Riley Paper Co., 6 cs. from Antwerp; Iwai & Co., 4 cs. from Kobe; C. L. Voorhees, 9 cs. from Yokohama; Happel & McAvoy, 3 cs. from Hamburg; R. F. Downing & Co., 7 cs. from Yokohama; National City Bank, 50 bls. from Bilbao; S. H. Pomerance, 3 cs. from Southampton and 12 cs. London; Japan Paper Co., 2 cs. from London; Corn Exchange Bank, 9 cs. from Osaka; Titan Shipping Co., 3 cs. from Hamburg; American Express Co., 3 cs. from Antwerp.

◆ Foreign Trade Opportunities

The following foreign trade opportunities are issued by the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce. Those interested are requested to communicate with the Bureau at its offices in Washington or New York or its branch offices in other cities, in every case mentioning the number of the inquiries referred to.

No. 56989—Paper milk bottles and caps. San Juan, Porto Rico. Purchase desired.

No. 56968—Glassine paper. Havana, Cuba. Agency desired.

No. 56969 — Newspapers, overissued. Hong Kong. Purchase desired.

No. 56958—Wrapping paper. San Juan, Porto Rico. Agency desired.

No. 57089 — Papermaking machinery (wrapping paper), complete installation. Tampico, Mexico. Purchase desired.

No. 57097—Cardboard. Mexico City, Mexico. Purchase desired.

No. 57090—Cigarette paper. Tandjong Balei, Sumatra. Purchase desired.

No. 57174—Insulating boards and building panels. Berlin, Germany. Agency desired.

No. 57094—Machine for making and printing milk bottle hoods and ring caps. Havana, Cuba. Purchase and agency desired.

No. 57096—Newsprint, glazed, and all other kinds of paper. Lima, Peru.

No. 57296—Cartons, packing. Agua Prieta, Mexico. Purchase desired.

No. 57262—Insulating board. Quito, Ecuador. Agency desired.

No. 57219—Paper bag making machinery. Barranquilla, Colombia. Agency desired.

No. 57295—Paper bottle manufacturing machinery and equipment. Genoa, Italy. Purchase desired.

No. 57224—Toilet paper. Lima, Peru. Agency desired.

No. 57218—Paper bag filling machinery. Vienna, Austria. Agency desired.

No. 57379 — Building and insulating board and blanket. Buenos Aires, Argentina. Agency and purchase desired.

No. 57371—Cardboard box manufacturing machines. Milan, Italy. Agency desired.

No. 57335—Drawing and tracing papers. Warsaw, Poland. Agency desired.

No. 57337—Lining paper, fancy. Prague, Czechoslovakia. Purchase and agency desired.

No. 57374—Paper and paper products of all kinds. Quito, Ecuador. Purchase and agency desired.

No. 57338—Toilet paper. Caracas, Venezuela. Agency desired.

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◆ U. S. Led World in 1931 Exports

According to a statement issued by the Department of Commerce, the United States was the world's leading exporter in 1931. Instead of having lost its foreign trade prestige as seems to be the impression in many quarters, this country led the world for 1931 exports.

Even in a year of profound depression and drastic price declines, such as 1931, the value of our domestic exports amounted to $2,377,981,786, to which every state and territory contributed its share. Only six states had exports valued at less than $1,000,000, while thirty of the states exported merchandise to a value of $10,000,000 or more, and twelve of the latter did an overseas business of more than $60,000,000 each.

LIKE ALPINE climbers, whose safety depends on cooperation and mutual help, the men who are traveling the uphill road of business today, have a mutual responsibility to the public, to themselves and to each other.

The maintenance of Quality; the stability of price; the service of the trade—all are better for the helpful spirit of TEAMWORK.

We shall esteem it a privilege as well as an opportunity to be of assistance in any

of your problems where our specialized experience may be of service.

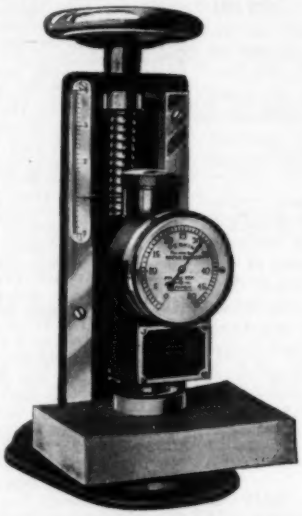
"When you help another over a difficult place — behold, you, yourself, have crossed it!"
—UNCLE JAKE.

KVP PROTECTIVE PAPERS

KALAMAZOO VEGETABLE PARCHMENT CO.
KALAMAZOO - MICHIGAN

PERKINS PRESSURE BULKER

Co-ordinates sheet count with bulk in inches



Positive uniform standard for gauging bulk of paper. Simply place the sheets between contact faces and clamp down until desired pressure is indicated on the dial. The exact thickness can then be read from the vertical scale.

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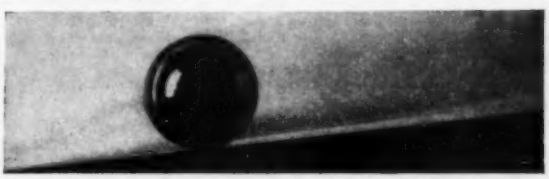

ROLLS LIKE A BALL

Perfectly balanced, all wheels equipped with tool steel roller bearings, the Marion Dolly rolls like a ball under the heaviest load.

MARION Dolly Truck

is of special value in the paper industry. Handles rolls, cases, bales, cartons—easily and swiftly. Loads from side or end. Seven models—some for rolls, some for cases. For instance, No. 6 is a light flat top model, weighs 37 lbs., is 4 in. high, carries a ton case without a whimper.

THE MARION MALLEABLE IRON WORKS
924 Miller Avenue Marion, Indiana

Built to move paper EASILY

Send for circular describing all seven models in detail.

CURRENT QUOTATIONS

New Papers

Writing—	
White rag	12–40
White sulphite	5–30
Colored rag	11–40
Colored sulphite	5–30
Ledger—	
White rag	12–40
White sulphite	7–30
Colored sulphite	7–30
Colored rag	11–40
Bond—	
White rag	12–40
White sulphite	5–30
Colored sulphite	5–30
Colored rag	11–40
Book—	
No. 1 S. & S. C.	4.75– 7.50
Machine finished	4.25– 6.00
English finish	4.25– 6.00
Coated and enameled	6.25– 9.00
Lithograph, M. F.	6.50–11.00
Newsprint—	
Rolls, contract, per ton, delivered New York	53.00–
Rolls, transient, per ton, delivered New York	53.00–
Sheets, per ton, delivered New York	58.00–
Sideruns, per ton, delivered New York	38.00–42.00
Cover stock—	
Coated, both sides	–10.25
Coated, one side	–10.15
Tissue—	
No. 1 white, 20x30	.65– .70
No. 2 white, 40x36	.55– .65
No. 1 manila, 24x36	.55– .65
Kraft	.65– .70
Wrapping—	
No. 1 kraft	4.25– 5.00
No. 2 kraft	3.25– 3.50
Southern kraft	3.25– 3.50
Boards—	New York and Chicago
News	24.00–26.00
Straw	32.00–35.00
Plain chip	24.00–26.00
White coated chip	35.00–40.00
Manila coated chip	30.00–35.00
Binders' board	55.00–60.00

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◆ Central Paper Company Answers Suit

The Central Paper Co., Muskegon, Mich., has answered a charge filed against it in the U. S. District court at Grand Rapids, Mich., by Air-Way Electric Appliances, Toledo, Ohio.

Vacuum cleaner paper sold by the paper company to the Toledo concern was developed by C. W. Smith, general manager of the paper company and other employees of the company. Since substituting its paper for an inferior product formerly used, the paper company has been prevailed upon to give exclusive use of the paper to the Air-Way company, but the Central Paper Co. has reserved the right to sell to any other vacuum cleaner manufacturer.

◆ Meets Market Conditions of Increasing Value of Product

Today's market witnesses the shattering of many long established retail price structures, with a consequent loss in profits to merchants handling such items.

The A. P. W. Paper Co., of Albany, N. Y., is meeting this condition, not by breaking down a long established price, but by offering to both the trade and the consuming public a greater value at no increase in price.

A. P. W. Jr. Satin Tissue, the quality leader of the A. P. W. retail line, has been increased from the old count of 1,500 sheets per roll to 2,000 sheets per roll. This 33⅓ per cent increase in quantity is offered with absolutely no change in the high quality of A. P. W. Jr. Satin Tissue and at no change in price.

The A. P. W. Paper Co. feels that increasing the value of its product rather than tearing down a price established over a period of many years will serve not only to increase sales on A. P. W. Jr. Satin Tissue, but will also insure and stabilize a proper margin of profit to the trade.

◆ THE MEMBERS of the Louisiana Section of the American Chemical Society will be guests of the Research Department of the Bogalusa Paper Company, at Bogalusa, May 21. Members of the unit will go by automobile to Bogalusa and spend the day inspecting the research facilities of the paper plant, then present a scientific program that night.

◆ Paper Manufacturer Under Restraining Order

Recent press dispatches announce that a permanent injunction has been granted in the U. S. District court, restraining Bertrand Hopper, of Kalamazoo, Mich., from the manufacture or sale of paper until February 9, 1937. This was done in answer to a petition of the Western Tablet and Stationery Co., Dayton, Ohio.

The complaint charged that Mr. Hopper in selling his paper interests to the Western Tablet and Stationery Co., promised not to enter into competition with the new corporation, but violated the agreement by organizing the Hopper Paper Co. and Sangamon Co., both of Taylorville, Ill.

◆ RECAPITALIZATION of the Robert Gair Company under the laws of Delaware and the acquisition of other units to balance the company's present operations is proposed in a plan being sent to stockholders. President Donaldson of the company, manufacturer of paper, paper board and paper boxes, says further "opportunities for progress appear limited unless our operations are balanced by acquisition of coordinating and complementary units." Under the plan each outstanding share of Class A stock shall be entitled to receive $12.50 par value of 6 per cent income notes, one share of new preferred stock and one share of new common. Each outstanding share of Class B shall be entitled to receive two-thirds share of new common. Holders of more than 70 per cent of the outstanding shares have already signified approval of the plan. Capitalization will be: Six per cent income notes, $7,000,000 authorized, $2,330,170 issued; preferred stock, 560,000 authorized, 186,408 issued; common, 1,900,000 authorized, 575,000 issued.

◆ THE ANNUAL report of the Flintkote Company, manufacturer of roofing and building papers, for the year 1931 shows a net loss after amortization, depreciation, State and Federal taxes and other charges of $184,279, as compared with a net income of $43,597 or 7 cents a share on 668,046 combined Class A and B shares in 1930.

◆ Warren B. Bullock Made Lieutenant Colonel

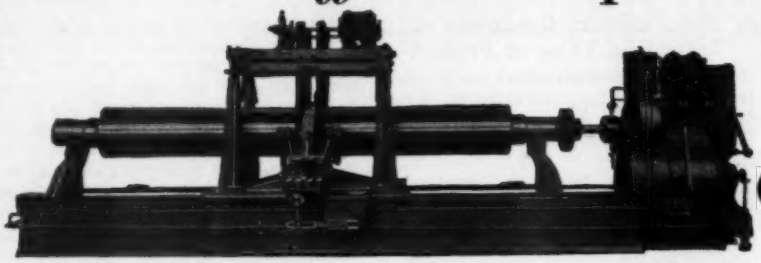
Warren B. Bullock, manager of the Import Committee of the American Paper Industry, was notified on April 22 of his promotion to the rank of Lieutenant Colonel in the Quartermaster Reserve. Colonel Bullock served in the World War as a commissioned officer and on his return to civil life accepted a commission in the Reserve Corps. He was one of the founders of the "Winter Plattsburg" conferences, which have since been developed into the regular program of instruction followed by reserve officers who wish to keep abreast of current thought in the military profession.

Colonel Bullock has also served as the representative of the War Department at his home, Yonkers, N. Y., in charge of recruiting for the Citizens' Military Training Camps, and as vice-chairman of the Westchester County recruiting organization. Although assigned to the 502nd Port Headquarters, Colonel Bullock has recently been transferred to staff duty in connection with studies of the organization of units to handle troops at embarkation or debarkation ports in case of another national emergency.

Prior to his present assignment he was in the Motor Transport service, as a result of his having been Senior Instructor at the Motor Transport School which was organized at Jacksonville, Fla., during the war.

◆ AFTER an existence of sixty-nine years, the suspension of *The Paper Makers' Monthly Journal*, London, England, was announced with the March issue. Insufficient support by the papermaking and allied industries was given as the reason for terminating the publication.

Over 70 different Paper Mills use . . . .



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There is 50 years' experience in the manufacture of Rolls and Roll Grinders behind these machines. Extreme rigidity and improved wheel bearings insure maximum cutting speed and perfect finish. — Over 70 Paper Mills in which they are installed attest to their extreme accuracy and trouble-free operation.

Two exclusive features contribute largely to the accuracy and ease of operation of the LOBDELL Roll Grinding Machine. They are (1) PROVISION FOR LEVELING THE BED which perfectly compensates for wear or change in the foundation, and (2) THE AUTOMATIC CROWNING DEVICE, the only device which produces the *exact* predetermined crown by the simple setting of a micrometer scale.

Other features of LOBDELL Roll Grinders are: — Direct connected, enclosed, geared driving head — Automatic Lubrication throughout ——Protection of all moving parts. Literature gladly sent upon request.

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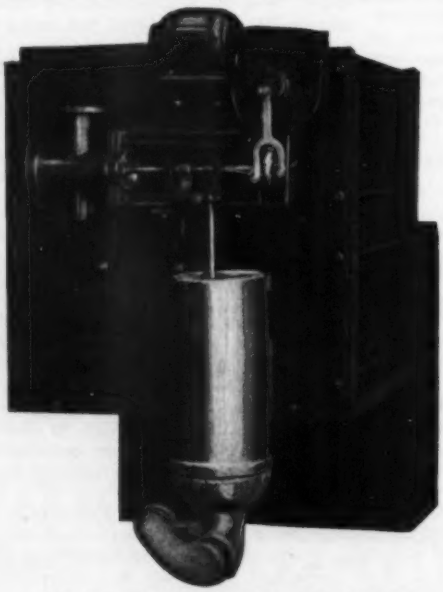

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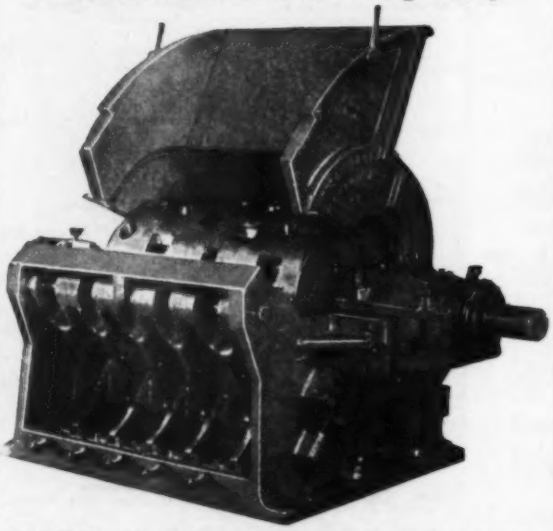

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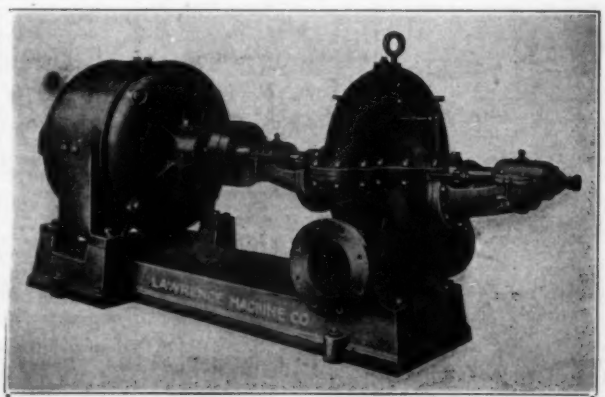

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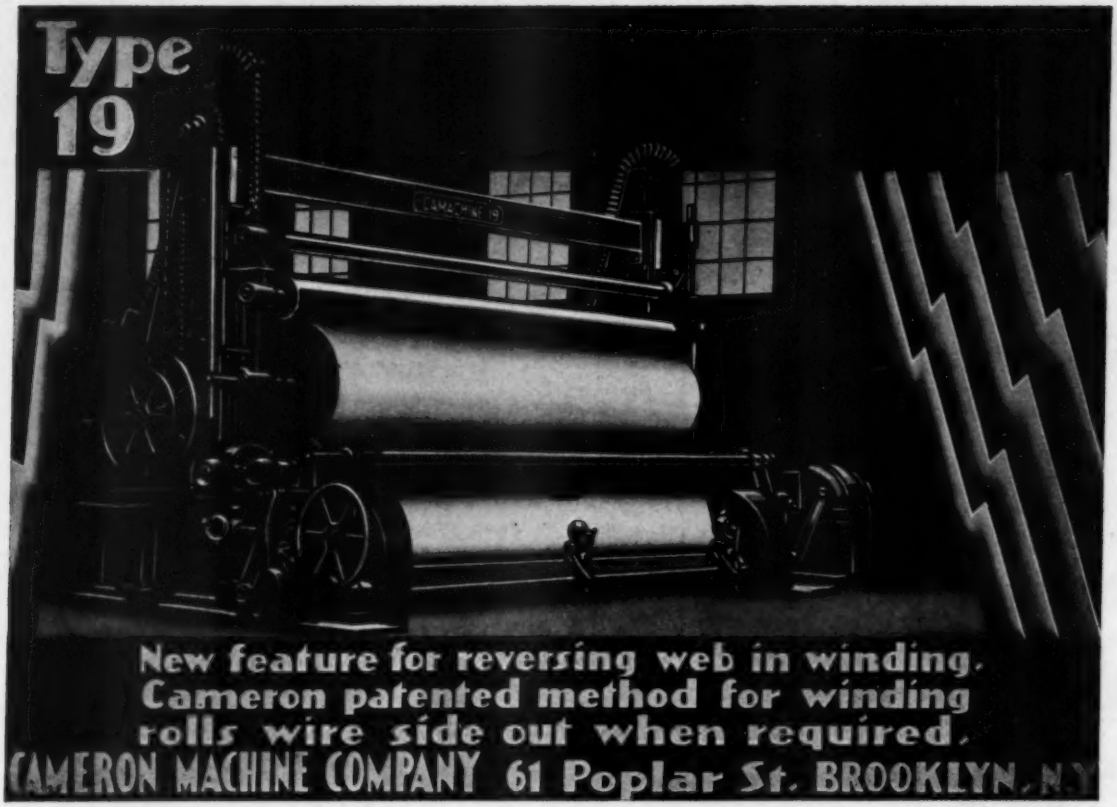

New feature for reversing web in winding. Cameron patented method for winding rolls wire side out when required.

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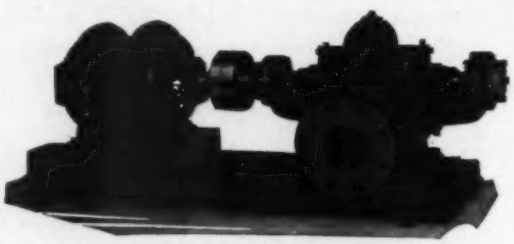

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Silicating Machines
Miscellaneous Special Purposes

TRANSMISSION MACHINERY
Gears, Cut: Spur, Single and Double Helical (Farrel-Sykes Continuous Tooth Type)
Speed Reduction Units (Farrel-Sykes)

See PAPER AND PULP MILL CATALOG or LOCKWOOD'S DIRECTORY — 1932

Farrel Chilled Iron Rolls combine maximum strength with notable hardness, flawlessness of surface and extreme accuracy. Paper Finishing Calender Stacks in all sizes up to 298" face, equipped with electric, hydraulic or ratchet lift, all operated from the floor. Other uses listed above.

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Glens Falls Mach. Works
Moore & White Co.
Oliver United Filters Inc.

Pulp Washers
Glens Falls Mach. Works
Oliver United Filters Inc.

Pulpers
The Baker Corp.

Pulpwood Stackers
Jeffrey Mfg. Co.
Link-Belt Company

Pumping Machinery
Goulds Pumps, Inc.
Lawrence Mach. & Pump Co.
Lawrence Pump & Engine Co.

Pumps (Boiler Feed)
Buffalo Pumps, Inc.
Goulds Pumps, Inc.
Lawrence Pump & Engine Co.

Pumps (Centrifugal)
The Baker Corp.
Buffalo Pumps, Inc.
Glens Falls Mach. Works
Goulds Pumps, Inc.
Lawrence Mach. & Pump Co.
Lawrence Pump & Engine Co.
Moore & White Co.
Oliver United Filters Inc.
Smith & Winchester Co.
Warren Steam Pump Co.

Pumps (Stock)
American Paper Mach. & Eng. Works
Beloit Iron Works
Buffalo Pumps, Inc.
Downingtown Mfg. Co.
Glens Falls Mach. Works
Goulds Pumps, Inc.
Lawrence Pump & Engine Co.
Moore & White Co.
Smith & Winchester Co.
Warren Steam Pump Co.

Pumps (Vacuum)
Oliver United Filters Inc.

Rag Cutters
Holyoke Machine Co.
B. F. Perkins & Sons, Inc.

Rag & Paper Dusters
Holyoke Machine Co.

Rechippers
Mitts & Merrill

Recorders (Liquid Level)
Bailey Meter Co.

Recorders (Specific Gravity)
Bailey Meter Co.

Recording Instruments (Temperature, Pressure, Humidity, Flow)
Bailey Meter Co.

Recovery Systems (Chemical Pulp)
Chemipulp Process, Inc.
J. O. Ross Eng. Corp.

Reduction Gears
Farrel-Birmingham Co.
Link-Belt Company
Terry Steam Turbine Co.

Reels
The Baker Corp.
Beloit Iron Works
Moore & White Co.
Smith & Winchester Co.

Reels (Automatic Collapsing)
Hudson-Sharp Mach. Co.

Refiners
Love Brothers, Inc.

Regulators (Feed Water)
Bailey Meter Co.

Regulators (Pulp Grinder)
General Electric Co.

Regulators (Steam)
Davis Regulator Co.

Removers (Paint & Finish)
Oakite Products, Inc.

Rewinders
Cameron Machine Co.
Downingtown Mfg. Co.
Samuel M. Langston Co.
Moore & White Co.

Roll Grinding
Farrel-Birmingham Co.
Moore & White Co.

Roll Grinding Machines
Farrel-Birmingham Co.
Lobdell Car Wheel Co.

Roll Stands
Cameron Machine Co.
Moore & White Co.

Roller Bearing Units
Dodge Mfg. Corp.

Rolls
Beloit Iron Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Holyoke Machine Co.
Lobdell Car Wheel Co.
B. F. Perkins & Sons, Inc.
Textile-Finish. Mach. Co.

Rolls (Embossing)
Hudson-Sharp Mach. Co.
B. F. Perkins & Sons, Inc.
Textile-Finish. Mach. Co.

Rolls (Rubber Covered)
Beloit Iron Works
Cincinnati Rub. Mfg. Co.
B. F. Goodrich Co.

Roof Drying Systems
J. O. Ross Eng. Corp.

Rotary Printing Units
Hudson-Sharp Mach. Co.
Paper Conv'ting Mach. Co.

Rust Preventatives
E. F. Houghton & Co.
Oakite Products, Inc.

Safety Treads
J. T. Ryerson & Son, Inc.

Save-Alls
Glens Falls Mach. Works
Moore & White Co.
Oliver United Filters Inc.

Saws
J. T. Ryerson & Son, Inc.

Scales
Toledo Scale Co.

Scales (Continuous Weight Control)
Toledo Scale Co.

Screen Diaphragms
B. F. Goodrich Rub. Co.

Screen Plates
Union Screen Plate Co.

Screens
Downingtown Mfg. Co.

Screens (Flat)
The Baker Corp.
Glens Falls Mach. Works

Screens (Rotary)
American Paper Mach. & Eng. Works
The Baker Corp.
Moore & White Co.
Trimbey Machine Works

Shafting
Link-Belt Company
J. T. Ryerson & Son, Inc.

Shafts (Collapsible)
Cameron Machine Co.
Moore & White Co.

Shakes
Moore & White Co.

Sheet Metal Work
J. O. Ross Eng. Corp.

Sheets (Iron and Steel)
J. T. Ryerson & Son, Inc.

Shower Pipes
Beloit Iron Works
Moore & White Co.
F. W. Roberts Mfg. Co.
Smith & Winchester Co.

Shredders
Mitts & Merrill

Silent Chain Drives
Jeffrey Mfg. Co.
Link-Belt Company

Silicate of Soda
Philadelphia Quartz Co.

Slitters
Cameron Machine Co.
Moore & White Co.

Slitting & Rewinding Mach.
Beloit Iron Works
Cameron Machine Co.
Hudson-Sharp Mach. Co.
Samuel M. Langston Co.
Moore & White Co.

Soda Ash
Diamond Alkali Co.
Grasselli Chemical Co.

Special Machinery
Baldwin-Southwark Corp.
Beloit Iron Works
Farrel-Birmingham Co.
Hudson-Sharp Mach. Co.
Southwark Fdy. & Mach. Co.

Speed Changes
Moore & White Co.

Speed Reduction Units
Farrel-Birmingham Co.
Link-Belt Company

Sprockets
Jeffrey Mfg. Co.
Link-Belt Company

Starch
Corn Prod. Refining Co.

Steam Meters
Bailey Meter Co.

Steel (Bars, Shapes, Plates, Sheets, Etc.
Joseph T. Ryerson & Son

Stock Cutters
B. F. Perkins & Son, Inc.

Stokers
Westinghouse Electric & Mfg. Co.

Stuff Chests
Moore & White Co.

Stuff Pumps
Beloit Iron Works
Moore & White Co.

Suction Box Covers
Moore & White Co.

Suction Boxes
Beloit Iron Works
Pusey & Jones Corp.

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The Borregaard Co., Inc.
Perkins-Goodwin Co.

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American Paper Mach. & Eng. Works
Glens Falls Mach. Works

Supercalenders
Holyoke Machine Co.
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Textile-Finish. Mach. Co.

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B. F. Perkins & Son, Inc.

Tester (Paper Stiffness)
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Testers (Bursting Strength)
B. F. Perkins & Son, Inc.

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Pusey & Jones Corp.

Toilet Machine (Hard & Soft Roll)
Hudson-Sharp Mach. Co.

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Hudson-Sharp Mach. Co.

Towers (Loading and Unloading)
Link-Belt Company

Transmissions (Variable Speed)
Moore & White Co.

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Roeper Crane & Hoist Works, Inc.
J. T. Ryerson & Son, Inc.

Trucks (Dolly)
Marion Malleable Iron Wks.

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General Electric Co.
Terry Steam Turbine Co.
Westinghouse Electric & Mfg. Co.

Turbines (Hydraulic)
Holyoke Machine Co.

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Crane Co.
The Lunkenheimer Co.

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B. F. Goodrich Rub. Co.

Valve Specialties
Davis Regulator Co.
The Lunkenheimer Co.
Wm. Powell Co.

Valves
The Baker Corp.
Crane Co.
Davis Regulator Co.
Lunkenheimer Co., The
Wm. Powell Co.
Trimbey Machine Wks.

Valves (Digester)
The Baker Corp.

Valves (Electrically Operated)
General Electric Co.
The Lunkenheimer Co.

Valves (Gate)
The Lunkenheimer Co.
Wm. Powell Co.

Valves (Non-return; Emergency Stop)
The Lunkenheimer Co.
Wm. Powell Co.

Valves (Quick Opening)
The Lunkenheimer Co.
Wm. Powell Co.

Valves (Relief)
The Lunkenheimer Co.
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Ventilating Fans
B. F. Perkins & Son, Inc.

Ventilating Systems
Jeffrey Mfg. Co.
J. O. Ross Eng. Corp.

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Moore & White Co.

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Glens Falls Machine Co.

Water Wheels
Holyoke Machine Co.

Wet Machines
The Baker Corp.
Downingtown Mfg. Co.
Glens Falls Machine Wks.
Smith & Winchester Co.

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The Lunkenheimer Co.

Winder Shafts
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Downingtown Mfg. Co.
Moore & White Co.

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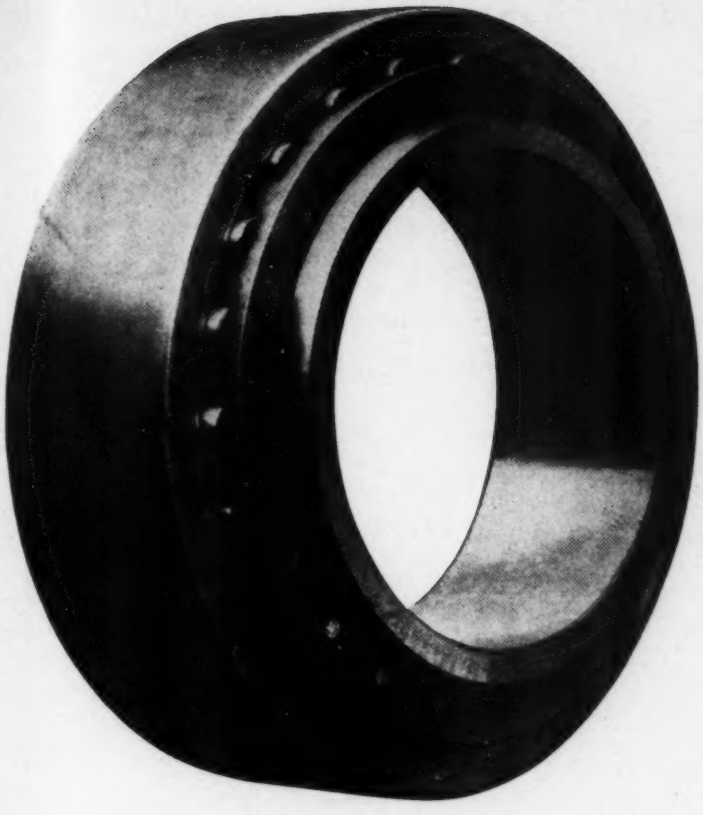

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